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THESIS

ANALYSIS, DESIGN, AND IMPLEMENTATION OF A LOGICAL PROOF-OF-CONCEPT PROTOTYPE FOR STREAMLINING THE ADVERTISEMENT OF BILLETS FOR THE U.S. MARINE CORPS RESERVE

by

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June 2008

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The primary objective of this thesis is to provide the Marine Corps with a thorough bottom up System Analysis of the next generation billet advertisement system that will replace Reserve Duty Online (RDOL). The study includes a detailed systems analysis, a generic architecture, logical data models, process models and a system model which provides the Marine Corps with a blueprint of the requirements for the next system of record. The secondary objective of this thesis was to analyze current system architectures that advertise and fill job vacancies within the Department of Defense (DoD), as well as commercial-off-the-shelf (COTS) products in order to identify what architecture should be leveraged by the Marine Corps during its next build.

In the midst of the long war, it is clearly evident that the reserve is an integral part of the Marine Corps total force. This integration hinges on the recognition that the ability for our reservists to be able to easily search and identify available opportunities is of the utmost importance. The proposed architecture and requirements analysis presented in this thesis will provide a solid foundation for the development of a next generation system.

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I. INTRODUCTION

A. BACKGROUND

Generally accepted knowledge indicates that the U.S. Marine Corps system for soliciting and staffing reserve billets is relatively fractured, redundant, geographically dispersed and inefficient for administrators and users. This research was conducted to assist the Marine Corps Manpower Information Technology (MIT) branch at the Manpower and Reserve Affairs (M&RA) department of Headquarters Marine Corps. A systems analysis was conducted to create an improved billet advertisement system for the Marine Corps Reserve, including identifying system requirements, developing a logical generic architecture, and providing a proposed system architecture for improving the system.

B. OBJECTIVES

The current system called Reserve Duty Online (RDOL) was meant to be a one-stop location for Reservists to look for and apply for different billets available for reservists to fill in support of the Marine Corps [1]. Funding shortfalls and organizational buy-in issues contributed to a system often referred to as fractured and lacking in the functionality needed to meet the objectives of the system.

This thesis provides the Marine Corps with a "roadmap" or outline to replace RDOL. The roadmap is comprised of a detailed systems analysis, a generic architecture, logical data models and process models which provide the Marine Corps with documentation to develop a new system of record.

A secondary outcome of this thesis was to analyze current system architectures that advertise and fill Department of Defense (DoD) job vacancies, including analyzing commercial-off-the-shelf (COTS) products. The goal was to determine the extent to which alternative architectural attributes can be leveraged by the Marine Corps to build its next generation system. Desirable attributes were incorporated into the design of the generic architecture.

C. RESEARCH QUESTIONS

The following are the main research questions addressed in this thesis:

1. What is the efficacy of the current technological process whereby the Marine Corps solicits and staffs billets to existing reservists, i.e., how well is Reserve Duty Online (RDOL) working?

2. To what extent can emerging methodologies and technologies be used to fundamentally improve the overall process?

3. What does a generic architecture of an ideal billet advertisement system look like?

D. SCOPE

The scope of the thesis encompasses how the Marine Corps currently publishes and processes reserve billets through the Reserve Duty Online (RDOL) web-enabled application, including recommendations for future system iterations. Within the context of this domain, the handling and utilization of member's resumes and applications was also examined. The thesis does not address how applications and resumes are utilized in the order writing process, but does address systems interface issues.

E. METHODOLOGY

This thesis subscribed to a bottom-up approach which focused on the lowest level components first to discover the requirements of the system. The requirements were then used to build the logical models that are presented to the Marine Corps for use in the design of its next system. To accomplish this strategy, the following two methodologies were used to analyze how the Marine Corps advertises and solicits reserve billets:

1. Framework for the Application of Systems Thinking (FAST)

2. Architecture Tradeoff Analysis Method (ATAM)

From each of these methodologies, a subset of prescribed steps applicable to the topic domain was utilized. These "subsets" were synthesized and juxtaposed to form a hybrid

methodology used to address the Marine Corps problem domain. The following is a brief introduction to each methodology and the steps that were used.

1. Framework for the Application of Systems Thinking (FAST)

FAST is a hypothetical methodology introduced in the text, *Systems Analysis and Design Methods* by Jeffery L. Whitten and Lonnie D. Bentley [2]. Even though the methodology is labeled "hypothetical", it still contains feasible and practical methodologies applicable for problem solutions. In short, it is an iterative and inclusive approach constructed of industry best practices. Its structure also allows the analysis to be responsive and flexible to different inputs and requirements. Model flexibility is crucial due to the breadth of input provided by system stakeholders and owners.

FAST is an eight phase process, of which the following four phases were utilized: scope definition, problem analysis, requirements analysis and logical design. Each phase is iterative producing results and milestones documented in the next phase. Listed below is a brief discussion of the composition of each phase and the deliverables for each phase.

1. Scope Definition: The purpose of this phase is to determine if the problem is worthwhile, as well as, determining if the breadth of the scope is within the realm of possibility. Deliverables for this phase include a detailed problem statement and identification of constraints.

2. Problem Analysis: This phase examines the existing systems and their interactions. The results of the analysis provide designers with an understanding of the current system and its problems. From this understanding, business requirements and criteria are defined which are used as the basis for Measures of Effectiveness (MOE) used to evaluate the system.

3. Requirements Analysis: This phase determines what the system should do, as well as defining and prioritizing business requirements. Specifically, this phase defines system functionality, data needing to be captured and stored and system capabilities. This

phase does not define technical specifications; rather it defines and prioritizes business requirements. The completed deliverable is a Business Requirements Document for modeling the new system.

4. Logical Design: This phase converts business requirements into a systems model. The systems model is used to ensure completeness and to identify missing functionalities or data requirements. This phase generated Logical Data Models and Logical Process Models.

2. Architecture Tradeoff Analysis Method (ATAM)

ATAM is an architectural evaluation methodology presented in *Evaluating Software Architectures: Methods and Case Studies* by Paul Clements, Rick Kazman and Mark Klein [3]. This methodology focuses on how well architecture addresses the quality attributes or goals required by stakeholders. It also provides an understanding on how different quality attributes or goals interact with each other. ATAM was chosen because it is a proven method providing needed structure during the architectural analysis process. This structure helps ensure that all system requirements are identified. Both of these characteristics make this methodology ideal for this problem domain, as they address a known RDOL core deficiency: a lack of understanding of stakeholder requirements.

The ATAM is a nine step process that investigates how well an architecture that is chosen and designed satisfies a particular set of quality goals, and it provides insight on how well the quality goals identified interact with each other [3]. The nine steps of the ATAM are: (1) the ATAM is presented to the client; (2) business drivers are identified and presented; (3) the architect presents the architectural methodology; (4) the architect identifies architectural approaches for addressing the problem domain; (5) the architect generates a quality attribute utility tree; (6) the architect analyzes the different architectural approaches; (7) the architect creates scenarios used to test the architecture against the quality attributes; (8) the architect evaluates the architectures using the scenarios generated; and (9) the architect presents and explains the results [3]. These nine steps are presented in Figure 1, and are divided into the following four functional

groups: presentation group, investigation and analysis, testing and reporting group. Of the nine steps, four through eight were used. Steps one through three was not utilized because the requirements dictated in each of the steps were completed by a phase in the FAST methodology. Step nine's requirements are incorporated into thesis conclusions.

Presentation	Investigation & Analysis	Testing	Reporting
1. Presentation of ATAM	***4. Identify the architectural approaches***	***7. Brainstorm and prioritize scenarios.***	9. Present the results
2. Presentation of Business Drivers	***5. Generate the quality attribute utility tree***	***8. Analyze the architectural approaches using scenarios***	
3. Presentation of Architecture	***6. Analyze the architectural approaches***		

Figure 1. Steps of the ATAM

We began the tradeoff analysis with the identification of architectures. This step correlates to step four of the nine step process introduced earlier. Within this step the different architectural approaches or styles are identified but not analyzed. Each architectural style describes the component types and their topology, and describes how data is patterned and controlled [3]. During this step the best architecture for this problem domain is identified, including pros and cons of relevant styles. The point is to gain an increased understanding of the strengths and weaknesses of the high level architecture model, including providing a baseline for subsequent analysis.

Step five generates a quality attribute, four-node tree (qatree) which identifies, prioritizes, and refines important quality attribute goals. Leveraging this tree is meant to

capture stakeholder requirements. The first level of the tree is the "utility" apex. The second level identifies the quality attributes for the system which are further refined on the third level. The forth level (the leaves) prioritize specific, quality attribute requirements [3]. These "fourth level requirements" are presented in the form of scenarios which are used to evaluate the validity of the architecture being proposed. These scenarios are used and refined in steps six through eight to prioritize and select the most desirable architectural solution.

F. ORGANIZATION OF STUDY

The remainder of this thesis is organized as follows:

Chapter II provides an overview of the Marine Corps Reserve, how billets are currently solicited and staffed, and an analysis of current RDOL problems. Chapter III describes and outlines the methodologies employed during the architectural design and systems analysis. Chapter IV identifies and analyzes current architectural designs that may provide the framework from which the next system can be designed. Chapter V presents the architectural vision, validated through use of scenarios. Chapter VI ties the results of the systems analysis to the generic architecture presented in Chapter V. Specifically, the data captured during the systems analysis was used to build the process and logical models, which are presented with their corresponding generic components. Chapter VII summarizes the study providing conclusions, recommendations and areas for future research.

II. MARINE CORPS RESERVE AND CURRENT SOLICITATION METHODS

A. BACKGROUND

Due to the wartime operational tempo throughout the Marine Corps, an increasing demand has been and will continue to be placed on the Marine Corps Reserve, which has made an extraordinary contribution both here at home and abroad. The importance of placing reserve Marines into appropriate billets is critical because they provide essential support and augmentation of the active component of the Marine Corps. Getting the right Marine in the right position in a timely manner in a wartime environment is paramount. This chapter discusses the history, background, and current status of the way in which the Marine Corps solicits and staffs various types of reserve billets.

1. Marine Corps Reserve

As of May 2007, the Marine Corps Reserve is comprised of over 33,359 Marines in Selected Marine Corps Reserve (SMCR) drilling reserve units from across America and Puerto Rico, over 2,576 Individual Mobilization Augmentees (IMA), 2,211 Active Reserves (AR), and nearly 60,000 Individual Ready Reserve (IRR) Marines. This is the pool of capabilities drawn upon to augment the SMCR or Active Component (AC) [4]. For the past six years the Marine Corps Reserve Component has augmented and reinforced the Active Component in support of the Global War on Terror. As of March 2007, 41,560 Reserve Marines have been mobilized since 11 September 2001 [5].

2. Types of Marine Corps Reservists

The Marine Corps Reserve is composed of the Ready Reserve, which includes the Selected Marine Corps Reserve (SMCR) and the Individual Ready Reserve (IRR), the Standby Reserve, and the Retired Reserve. Figure 2 depicts the types of reserve categories in the Marine Corps Ready Reserve. A brief description of each follows.

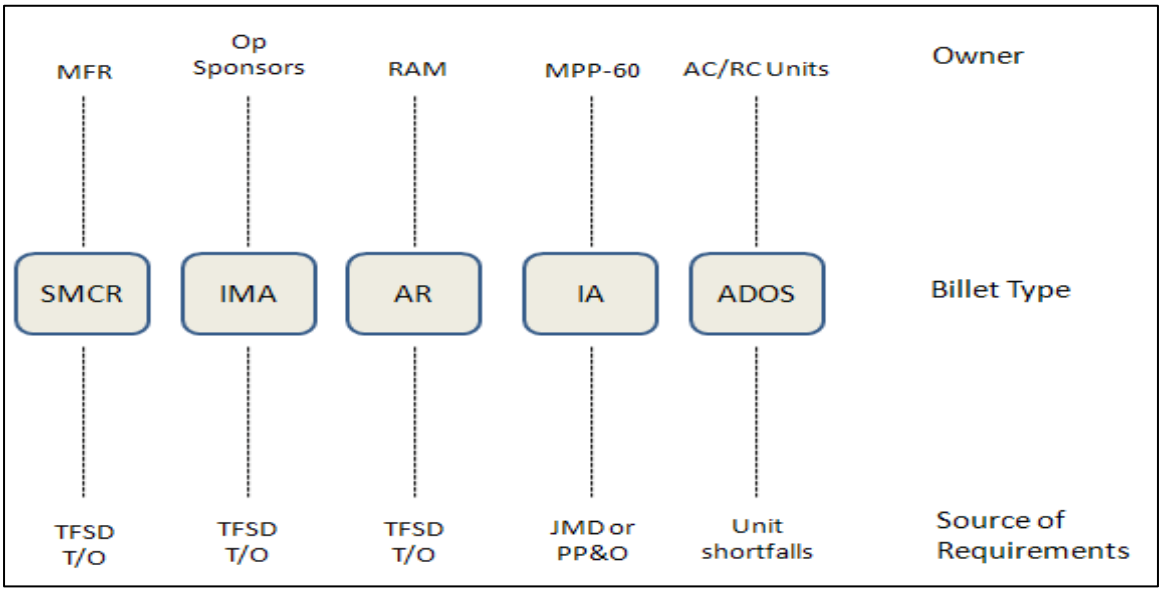

Figure 2. Marine Reserve Types

The largest group is the Individual Ready Reserve which consists of Marines in the Ready Reserve not affiliated with the SMCR who: (1) have not completed their Mandatory Service Obligation (MSO); or (2) have completed their MSO and are in the Ready Reserve by voluntary agreement; or (3) have not completed their MSO (are mandatory participants), but are transferred to the IRR during unique situations [6].

The second largest group in the Marine Corps Reserve is the Select Marine Corps Reserve (SMCR). SMCR units are located in 187 Reserve training centers across America and consist of more than 17,500 Reserves from 4th Marine Division (4th MARDIV); 8,500 from 4th Marine Logistics Group (4th MLG); 8,000 from 4th Marine Aircraft Wing (4th MAW). Members of the SMCR typically drill one weekend per month, and attend two weeks of annual training (AT) [4].

Individual Mobilization Augmentees (IMA) are Marines that are members of the SMCR, but are not members of a drilling SMCR unit. The IMA program provides a source of trained and qualified individuals to fill individual billets which augment the active component structure of the Marine Corps, Department of Defense (DOD) or other Departments or Agencies of the Government. IMA Marines fill billets contained on

Active Component Tables of Organization (T/O) and upon mobilization continue to perform the same type of duty that they do when they are drilling [7].

Active Duty Operational Support (ADOS), which was formally known as Active Duty Special Work (ADSW), is designed to provide the Marine Corps a means to utilize Reserve personnel of appropriate grades and skills, through short tours of active duty, to provide personnel augmentation for both Active and Reserve forces to accomplish special projects, and to meet operational, administrative, and exercise support requirements of a temporary duration. It provides opportunities for Reserve Marines in the SMCR and IRR to support short-term requirements, special projects, exercise support participation for both the Active and Reserve forces. ADOS Marines are assigned to major Marine Corps bases and stations, headquarters, and reserve unit locations as needs are identified by Operational Sponsors [8].

The Active Reserve (AR) program consists of Reserve officers and enlisted Marines who serve in selected, full-time active duty billets. The primary mission of AR Marines is to support the organization, training, retention, and administration of the Marine Corps Reserve. The AR program allows Marines an opportunity to serve on active duty and qualify for retirement benefits after 20 years of service [9].

The Reserve Counterpart Training (RCT) program is designed to provide members of the IRR an opportunity to improve military skills by training with their Active Component counterparts. This program enables members of the IRR, an opportunity to volunteer annually for assignments to Active Duty Training (ADT) at designated AC commands or for Annual Training (AT). The program is specifically designed to upgrade and maintain MOS and technical skills considered essential upon mobilization [10].

B. CURRENT SOLICITATION PROCESS

The current manner in which the Marine Corps solicits and staffs reserve billets utilizes various methods including website advertisement via Reserve Duty Online (RDOL), word of mouth, and hastily posted *spreadmarts*. A spreadmart refers to a situation where spreadsheets containing valuable corporate data are duplicated

uncontrollably and modified differently by different users producing a situation where each file presents a different version of the "truth" [11]. RDOL was originally designed to be the primary, required method to advertise vacant reserve billets. As noted earlier, the goal, ultimately, was to make RDOL the “one-stop” web portal where reservists were able to not only search and apply for different types of reserve billets, but also receive career guidance as well. Specifically, the designers of RDOL envisioned that the site would provide access to valuable career information that could be leveraged by reservists to dynamically manage their career and maximize their utility for the Marine Corps. But, as depicted in Figure 3, poor design and lack of funding has left the application missing many required user functionalities, which has led to an apparent decrease in use and further deterioration of the system. Many organizations publish vacant billets on their own websites vice on RDOL. A quick web survey in February 2008, found that the two largest Marine Corps Reserve websites (Marine Forces Reserve/Marine Corps Mobilization Command) have resorted to advertising reserve billets themselves. To further emphasize this point, the results of a functionality assessment conducted in September 2006 by infoReliance found that RDOL usage has dropped significantly since August 2005 and was attributed to an overall lack of awareness of the site itself [1].

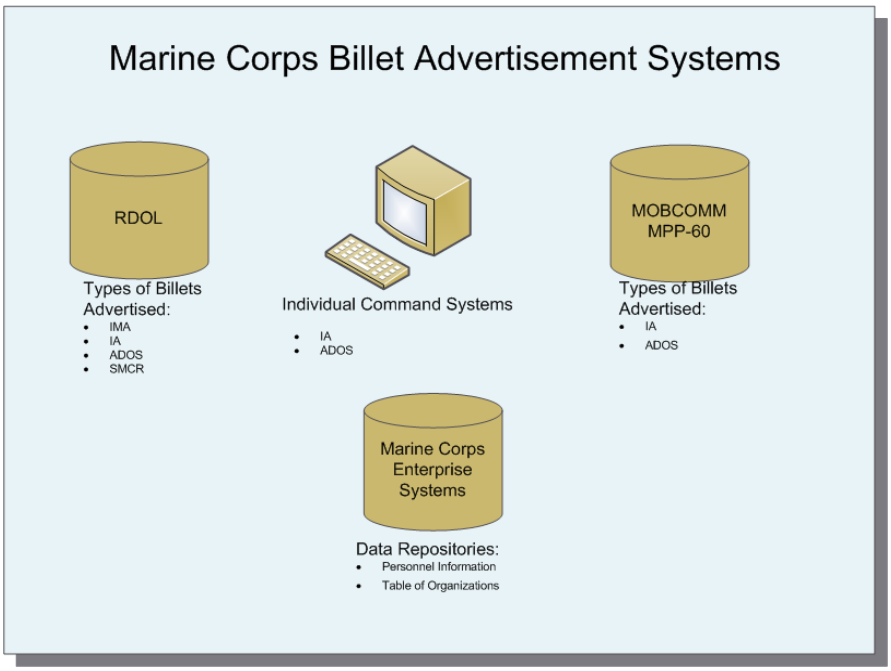

Figure 3. Current solicitation process

1. Problems with Current Systems

RDOL problems can be divided into front-end problems and back-end problems. The front ends of information systems support business functions extend out to organizational customers [2]. Currently RDOL's front-end user interface is not intuitive and lacks in functionality. The poorly designed user interface encourages end-users to revert to alternative methods of accomplishing tasks. The following are some specific examples of critical functionality missing from the front-end of the RDOL current iteration:

a. The search page contains several redirects to other sites that takes the user away from the principal reserve billet search page with no way to navigate back to it.

b. Standard search functionality does not allow the ability to sort the results of a search.

c. Some of the advertised functionalities are non-operational. For example, the distance search function does not work.

d. There are numerous redundant applications within RDOL that make the site inefficient and cumbersome.

e. There is no ability for operational sponsors to seek out potential candidates to fill vacant billets.

f. Reservists are unable to post their reserve qualification summary (resumes) for sponsors to analyze.

The back end of an information system supports the internal business operations of an organization and its suppliers [2]. In its current form, RDOL is a stovepipe system isolated from other Marine Corps computer resources having a limited capability to communicate with external resources.

The system also lacks required basic functionality that users require making the system unproductive. Some specific examples of current back-end problems include:

a. The design of the system's data storage and data manipulation infrastructure is inadequate. This has led to dirty data being proliferated throughout the various databases.

b. In its current iteration, RDOL is missing significant interoperability and automation quality attributes. For example, all TFSMS data is hand-entered by personnel from Reserve Affairs.

c. The system has a very limited ability to communicate or integrate with any other systems. Currently all personnel and table of organization (unit information) has to be manually entered into the system, but the system does transmit leads to prior service recruiters via the Automated Leads Management Reporting System (ALMRS).

The previous two lists are not all encompassing. There are additional system problems, but the lists do capture a flavor of the inefficiencies. Many of these problems may be attributed to ad hoc, incremental process through which the system was built, evidently with no architectural plan or useful framework. Figure 4 is provided as a descriptive summary of system incongruence's.

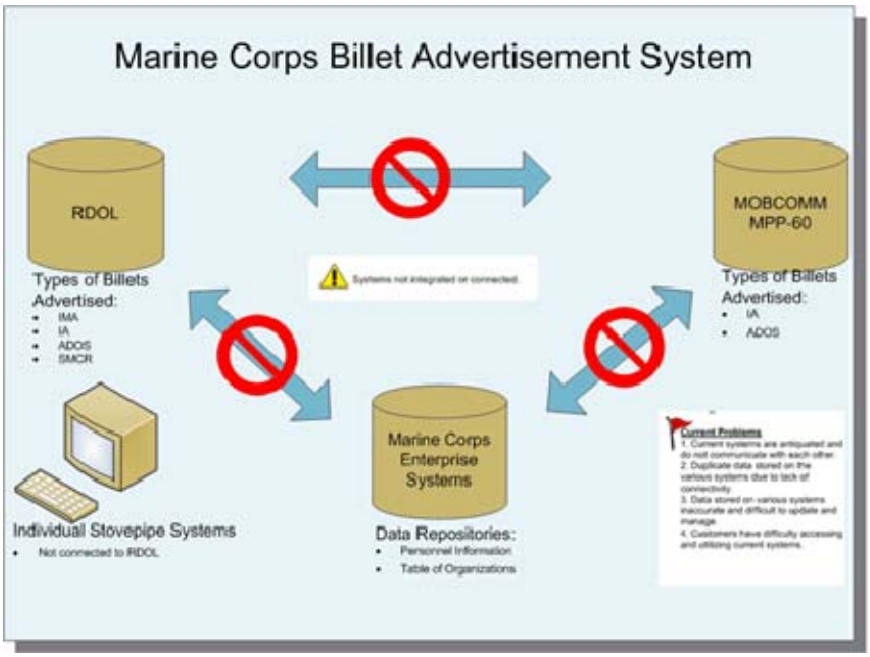

Figure 4. Current Stovepipe Configuration

Figure 4 depicts the current inefficient configuration of the Marine Corps Billet Advertisement System. No known architecture exists for the RDOL system, and the various enterprise-level systems cannot communicate with each other, e.g., multiple systems have no way to share or leverage applicable resources resulting in substantial amounts of rework, duplication and user frustrations.

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III. DEPARTMENT OF DEFENSE RESERVE RECRUITMENT PROCESSES AND SYTEMS

In order to ensure that the variety of best practices available are captured, other Department of Defense reserve recruitment processes were analyzed, including an examination of the Air Force's Volunteers in Professional Service (ViPS), the Navy's APPLY system, and lastly Monster government solutions.

A. AIR FORCES VOLUNTEER'S IN PROFESSIONAL SERVICE (VIPS)

In the spring of 2005, the Air Force Reserve established a Volunteer Process Working Group and Integrated Process Team (WG/IPT) in order to improve the process of matching reservist volunteers to employment opportunities. One of the main focuses of this working group was to evaluate and analyze potential candidate solutions for a future system. The main objective was to focus on capturing the functional requirements in order to develop a volunteer matching system prototype. In October 2005, the Air Force Reserve contracted Science Applications International Corporation (SAIC) to assist the WG/IPT in formally detailing requirements and help with the examination of potential candidate solutions [12].

1. VIPS System Functionality

Many of the processes within the ViPS program are currently fully functional within RDOL. Instead of covering every function of the ViPS program, the following section will examine the useful processes within ViPS that could be particularly useful for RDOL. Although there are hundreds of processes in both ViPS and RDOL, this section will discuss those found to be of the greatest utility. Each of the processes is listed by functional area (Reservist, Employer, Manager, and Administrator).

2. VIPS Features for Reservists

The Air Force ViPS web application has brought together every type of reserve opportunity and has truly created a "one-stop-shop". In addition to being able to view volunteer assignment opportunities, a ViPS user has the ability to submit their profile for

consideration to multiple job postings, apply to volunteer for billets (Figure 5), and even coordinate chain of command approval if necessary.

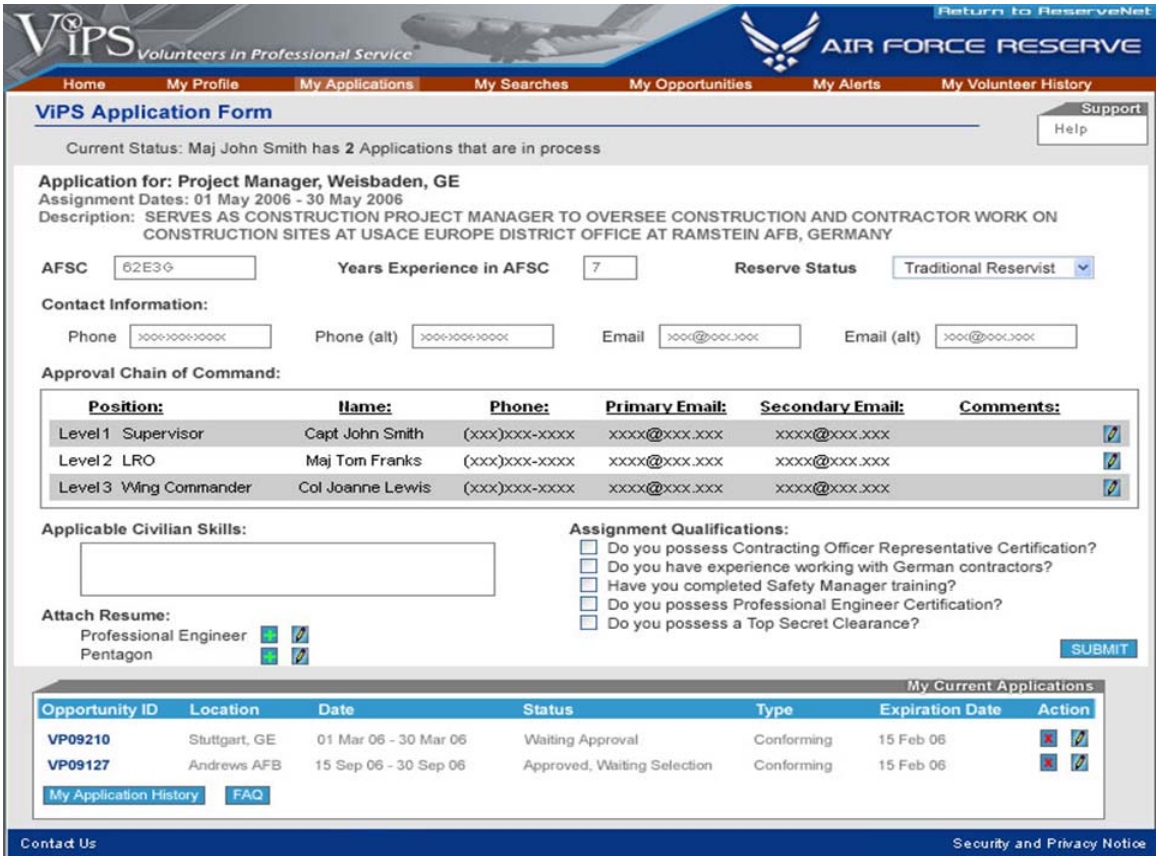

Figure 5. ViPS Application Form

One function that is highly desired in RDOL is the ability to manage an electronic Reserve Qualification Summary (RQS) with data populated from MCTFS and free text blocks [13]. As noted in Figure 6, the reservist has the ability to manage their profile by adding the following information: preferred AFSC, which is analogous to a Military Occupational Specialty (MOS), assignment duration, assignment location, dates available, and if they wish to receive solicitations from organizations.

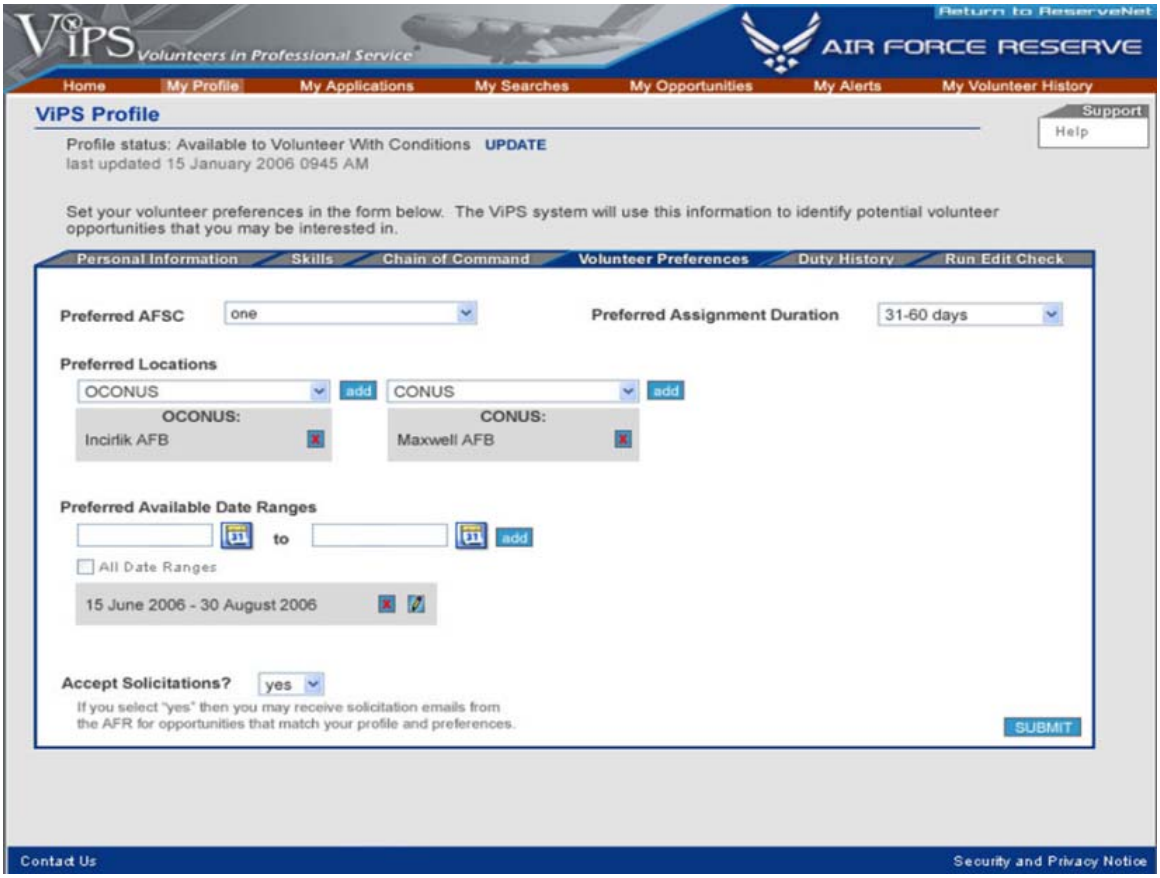

Figure 6. ViPS Profile Page

The user friendly dashboard is another useful benefit that automatically notifies the user of new opportunities and events as seen in Figure 7 each time he/she logs in.

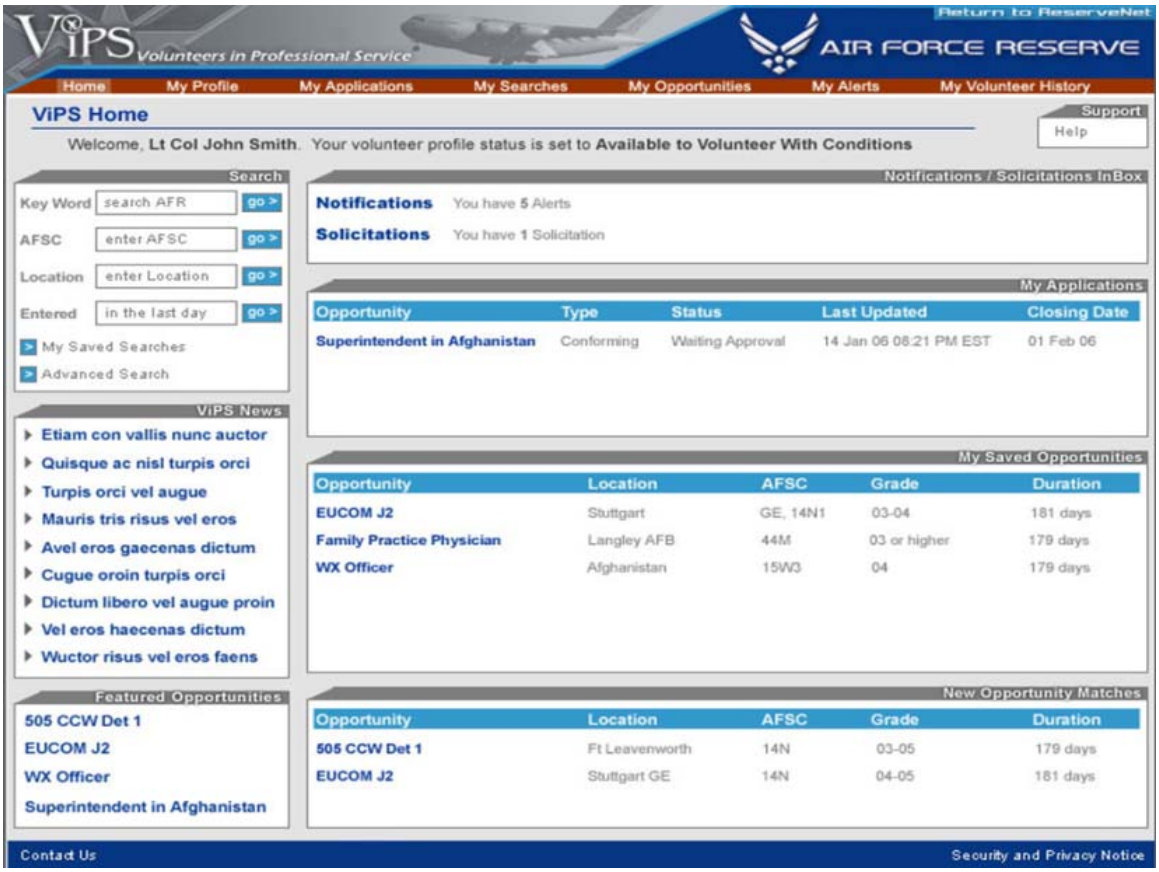

Figure 7. User Dashboard

One great additional feature is the ability to, "Email to a Friend" function that allows a user to email a posting to another member of the reserves. Even in our high tech world of web marketing with banners and scripts, word-of-mouth still remains one of our most powerful tools, which this feature allows us to leverage.

3. VIPS Features for Employers

Similar to Operational Sponsors/Billet Managers utilized in the Marine Corps Reserve billet process, ViPS divides the category of employer into requisitioner and broker. The requisitioner is more of a basic role that performs queries and does the initial input of the billet; the broker on the other hand is usually a program manager that has greater roles than the requisitioner. Requisitioners can manage all active Volunteer opportunities and create new ones with an easy to use dashboard interface. (Figure 8)

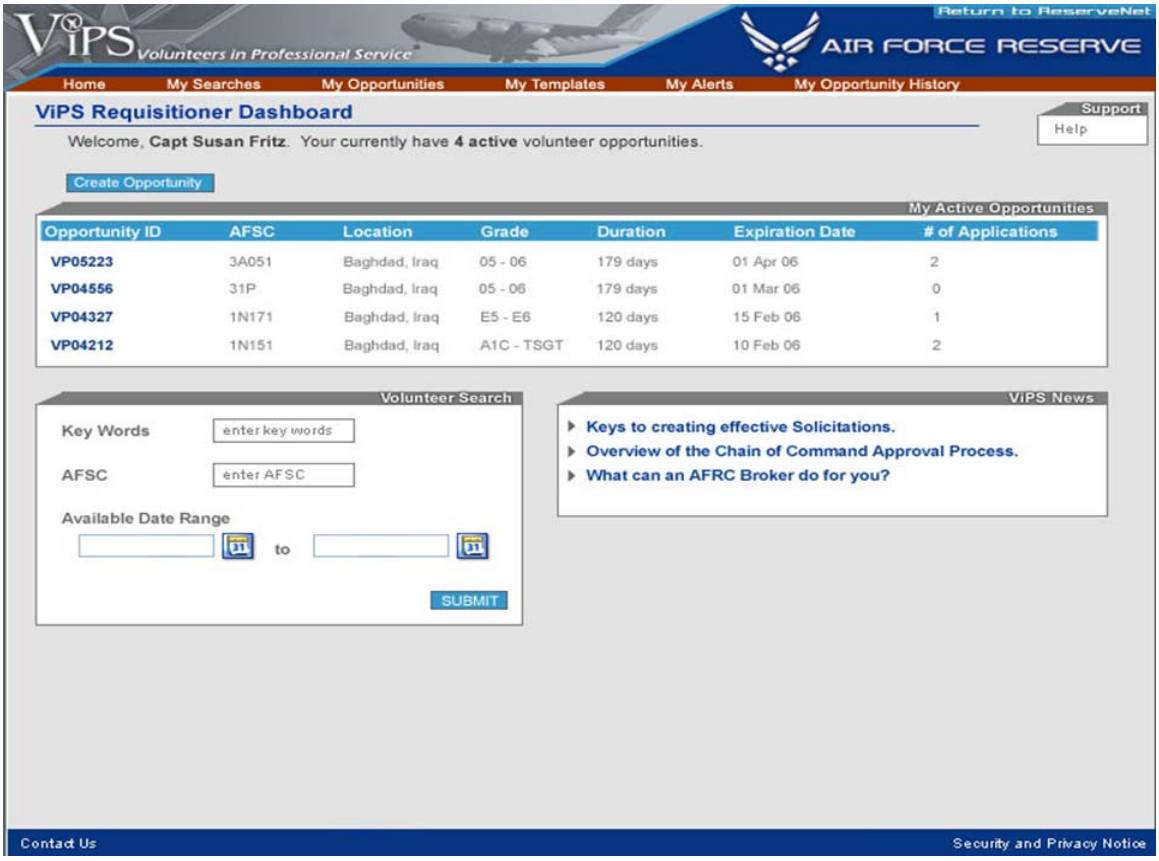

Figure 8. Requisitioner Dashboard

These added roles include: facilitating the resolution of non-conforming applications and validating the approval for volunteer applicants. Similarly to RDOL, ViPS allows the ability to advertise volunteer opportunities to the reserve community, but more importantly, it allows billet managers to identify qualified reservists to fill vacancies through queries of profiles posted by the reserve members. Furthermore, it also contains easy to use Template-based opportunity entry, a user-friendly dashboard interface to manage requisitions and candidates. Another valuable benefit of ViPS is the automated email to solicit candidates and automated notifications to candidates informing them of new billets.

4. VIPS Features for Managers (Approval Authorities)

Currently RDOL does not allow for the ability for a reservist to apply for a billet or submit any type of application. One great benefit in place in ViPS is the ability for approval authorities to route requests through the chain-of-command for approval/disapproval (Figure 9).

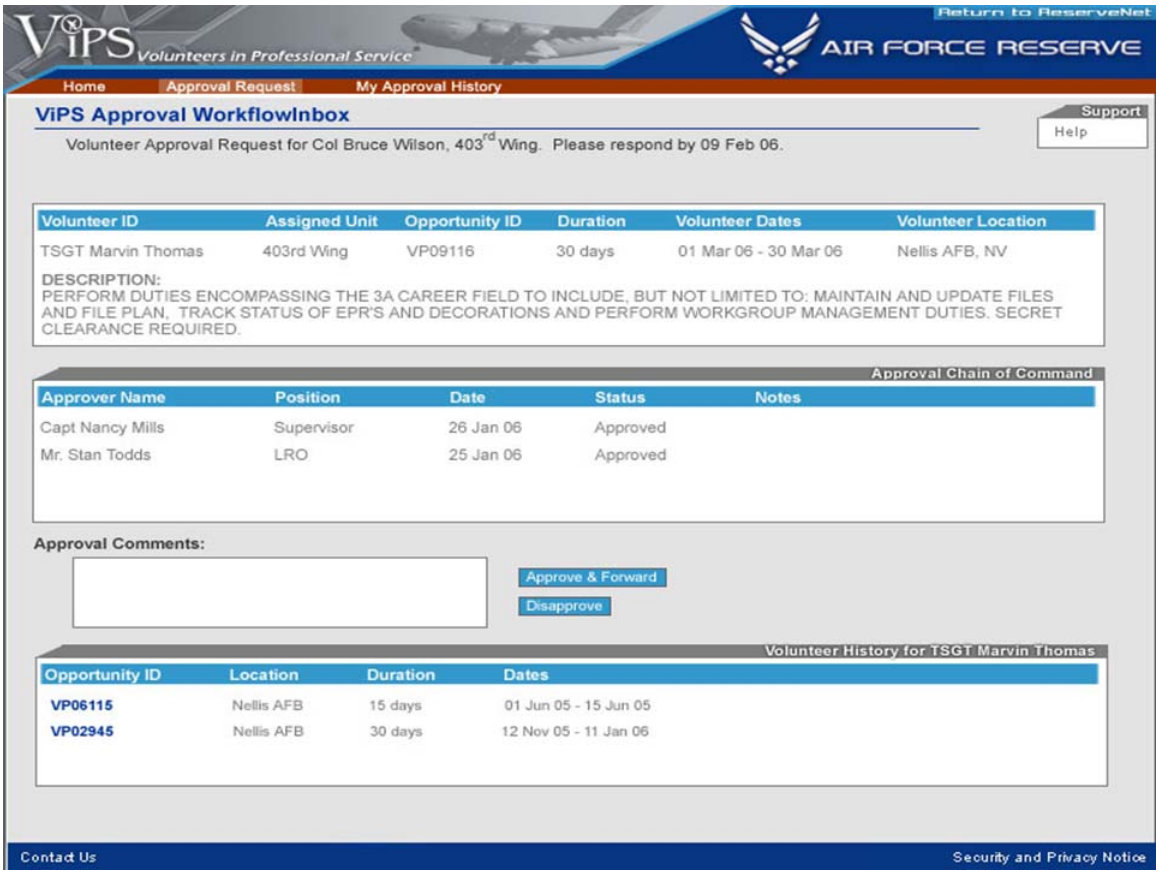

Figure 9. Approval Process in ViPS

Typically the request will be routed via system generated emails with links for the approver to login to the system to approve or deny. Additionally, once a candidate has been approved for a billet, the system automatically modifies the users profile in order to "black out" the candidates dates of availability. Managers also have a greater amount of

visibility in the system pipeline through the personalized management dashboard interface which allows them to see a broad view of their potential reservists, applicable billets, and application(s) status.

5. VIPS Features for Administrators

Similar to the members of the Marine Corps' Career Management Team (CMT), ViPS administrators are responsible for configuration of the system and its ongoing maintenance including establishing roles and access privileges, generating and distributing reports, and performing general help desk functions. Unique to ViPS is the ability of the administrator to configure and post employment surveys, adjust the searching agent, and ability to automatically detect "stale" profiles. One great feature in ViPS is the ability of the administrator to adjust the volunteer and opportunity matching agents (search by volunteer profile or search by opportunity profile) which can be configured by the administrator to assign weights to specific fields to enable accurate search results (e.g., AFSC = .25, Available Date Range = .15, Location = .20, etc.). Moreover, it can be configured to automatically detect expired or "stale" volunteer profiles and allow the administrator to deactivate or archive and automatically notify the volunteer (email).

6. VIPS Conclusions

Unlike RDOL, ViPS has carried a significant amount of funding behind it, and was given a thorough requirements analysis. Over the past three years, the Air Force Reserve has worked diligently on developing ViPS. Moreover, ViPS is truly a "one-stop-shop" for a reservist seeking employment in the Air Force Reserve. As the Air Force owns all of the source code for the ViPS program, future work could be conducted by the Marine Corps to address the potential of porting ViPS to become a Marine Corps web-enabled application. Although some modifications would be required due to differences in our personnel systems, the basic functions of advertising reserve billets remains the same. This could potentially save the Marine Corps a tremendous amount of money and will be discussed further in the future work section of this thesis.

B. NAVY'S JOAPPLY SYSTEM

One of the Navy's overarching goals is to maximize the readiness of the fleet by ensuring that its sailors are appropriately trained and that their skills honed and leveraged by ensuring that sailor's career track is closely aligned to the goals of the Navy. The Navy manages this process by providing sailors with dynamic and comprehensive set of career management tools to ensure that they meet the appropriate milestones in order maximize their career potential. The Naval Reserve career management tools are comprise of a three tiered system that addresses different segments of sailors within the Naval Reserve [14].

The first system of the triad is titled APPLY. APPLY is a web enabled portal that is designed to facilitate the screening and subsequent assignment of senior officers into positions of leadership and management. The second system is titled Career Management System Interactive Detailing System (CMS). It was designed to assist enlisted reservists in managing their careers by allowing them to directly communicate with Assignment Coordinators as well as providing the resources to search for available billets. The third is titled JOAPPLY. JOAPPLY is a component of the APPLY which is designed to help Naval Reserve leadership place junior officers in appropriate billets. JOAPPLY also provides junior officer's with a resource in which they can explore career opportunities drawn from the entire billet base of the Naval Reserve that is available assignment [14]. JOAPPLY aligns closest with what the Marine Corps wants to do with their system so our primary analysis will focus on it.

1. JOAPPLY Background

After the success of the Apply system for billeting senior leadership in the Naval Reserve it was determined that a system needed to be built for the junior officers that provided them with similar resources. JOAPPLY was modeled after the CMS system in the sense that it was designed to be an interactive and dynamic application that allowed junior officers to actively manage their career [15]. The previous system, JASS, only allowed sailors to view jobs, and did not provide sailors with an avenue in which they could apply for billets they were interested in without the help of a command

representative. This process did not provide sailors with the ability to manage their career nor did it really give employers any sense on whether the applicants applying for vacant billets were qualified.

2. JOAPPLY Process Overview

JOAPPLY is a four-phase, time driven process. The first phase, depicted in blue in Figure 10, allows Operational Support Officers (OSO), program managers, the ability to create, read, update and delete advertised billets. It also provides the OSOs with the ability to insert comments and provide applicable information about the billets being advertised. The second phase, depicted in green in Figure 10, allows Reserve Component Junior Officer's (RCJOs), which are defined as junior officers assigned to the active Naval Reserve, to apply for vacant billets in the Naval Reserve as long as they are within prescribed detailing windows. The third phase, depicted in yellow in Figure 10, gives the OSO and Commanding Officers (CO) the ability to review, prioritize and comment on each application made for vacant billets. Ranking and comments can only be done during this window. The fourth phase, depicted in red (Figure 10), is where CNRFC N12 Assignment Coordinators review all applicants, the OSOs and COs rankings and comments, then slate the Junior Officers to billets [16].

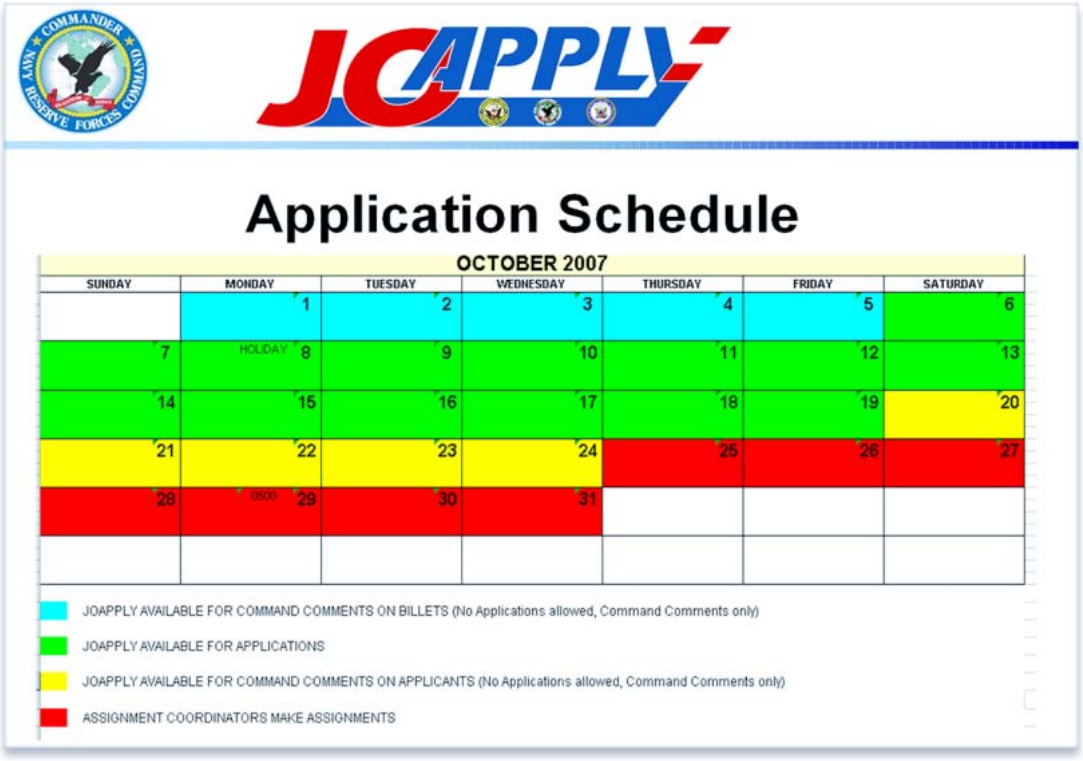

Figure 10. JOAPPLY Application Schedule

3. JOAPPLY Stakeholders and Functional Overview

There are four types of primary users that were identified by JOAPPLY requirements document: Reserve Component Reserve Component Junior Officers (RCJO), Reserve Component Detailers (RCD), Reserve Component Program Managers (RCPM) and Reserve Junior Officer Interactive Detailing Managers (RJOID). Each of these different roles is afforded different levels of access to the functionalities of the system. Access is based on the position that the JOAPPLY user is filling.

RCJOs are the primary business users of the system. That being said, they have a dynamic and rich user interface that allows them actively manage their career, as well as, search and apply for future positions. Within the context of this thesis, RCJOs correlate to a Marine Reserve in the legacy RDOL system, but the Navy's definition of reservist is a more stringent in the sense that the Navy only grants active reservists access to the system.

Figure 11. Login Process for JOAPPLY

When a RCJO attempts to enter the system he or she must go through the Apply system as depicted on the left screen shot of Figure 11. Once the user clicks on the JOAPPLY link, the user is routed to the login page and the RCJO then logins in via CAC authentication or via password authentication. This is similar to the RDOL process which utilizes Marine Online (MOL) LDAP services or password access to authenticate its users. After logging in, RCJOs will be directed to their homepage which is depicted in Figure 12. The homepage contains two functional sections: The Profile and Registration section and the Assignment Tools section.

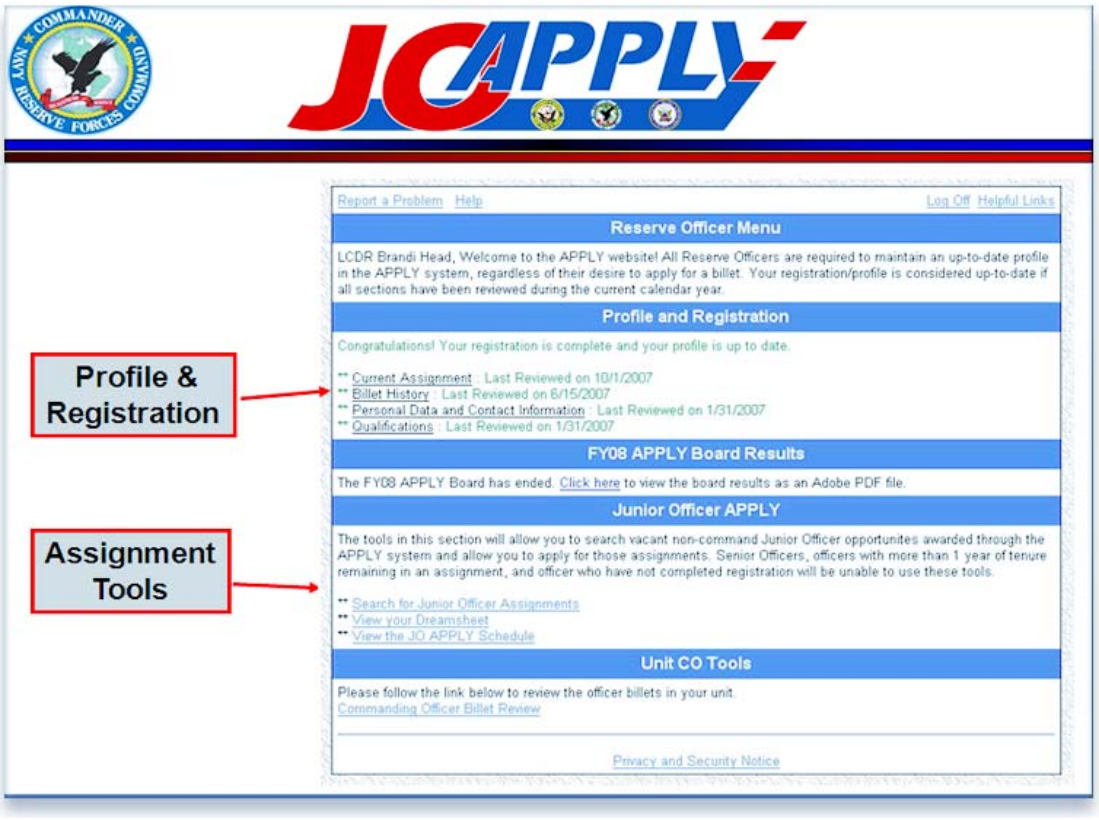

Figure 12. Member's Homepage

The first functional section, the Profile and Registration section, contains a Current Assignment subsection, a Billet History subsection, a Personal Data and Contact Information subsection and a Qualifications subsections. When RCJO signs onto the system for the first time they are prevented from accessing other functionality of the system until they verify their personnel data, this is depicted in Figure 13. RDOL does not currently make a Marine verify their personal information before using the system, which causes complications in the selection process.

Figure 13. PR Initial login prompt to update

Within the current assignment subsection (Figure 14) the user must verify that all of their current billet information contained within the system is correct. The information displayed comes directly from the Reserve Headquarters System; therefore any inaccuracies must be corrected through the member's parent reserve activity.

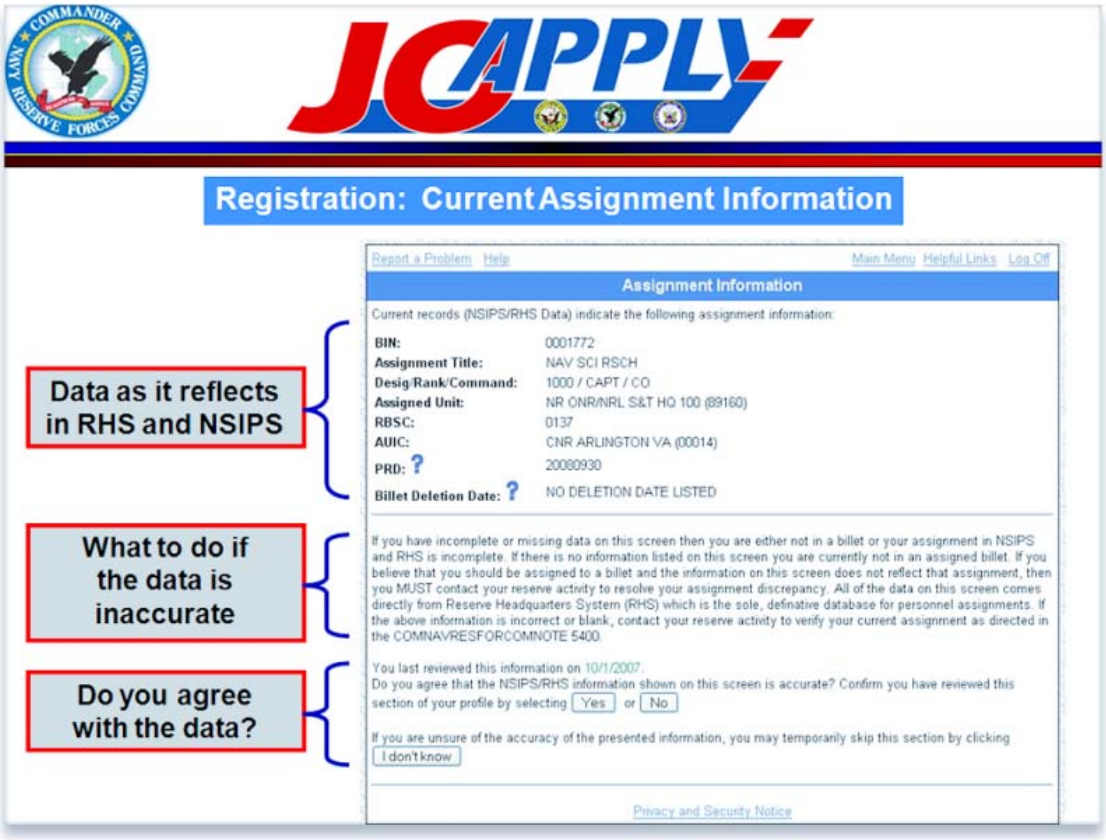

Figure 14. Current Assignment Verification

The Billet History subsection allows the member to verify that their chronological billet history is accurate. Members can edit, delete and add historical billet entries to this section (Figure 15).

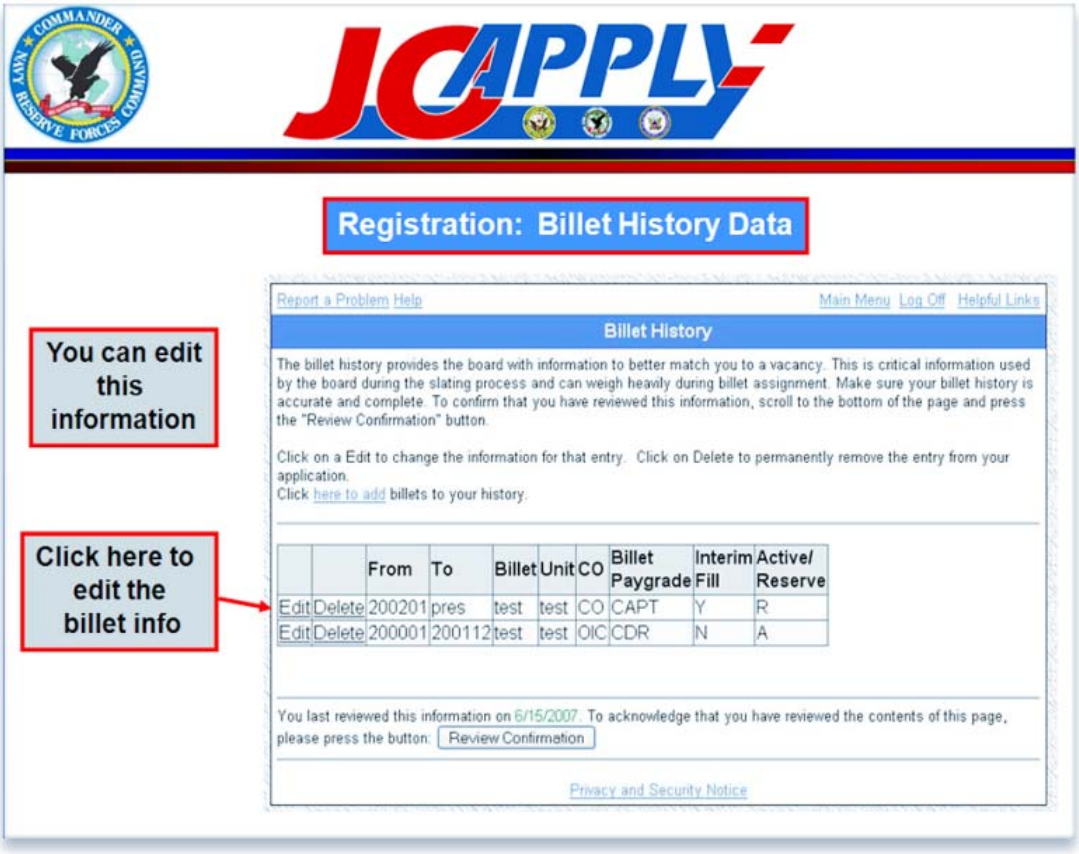

Figure 15. Billet History Data

The Personal Data section (Figure 16) allows the member to verify their SSN, Name, Date of Birth, Designator, Rank, Promotion, Date of Rank, Address, Home Phone and Work Phone. All the data displayed in this subsection is from the RHS repository, so if anything is inaccurate in this section the member needs to contact his or her reserve activity to update the information.

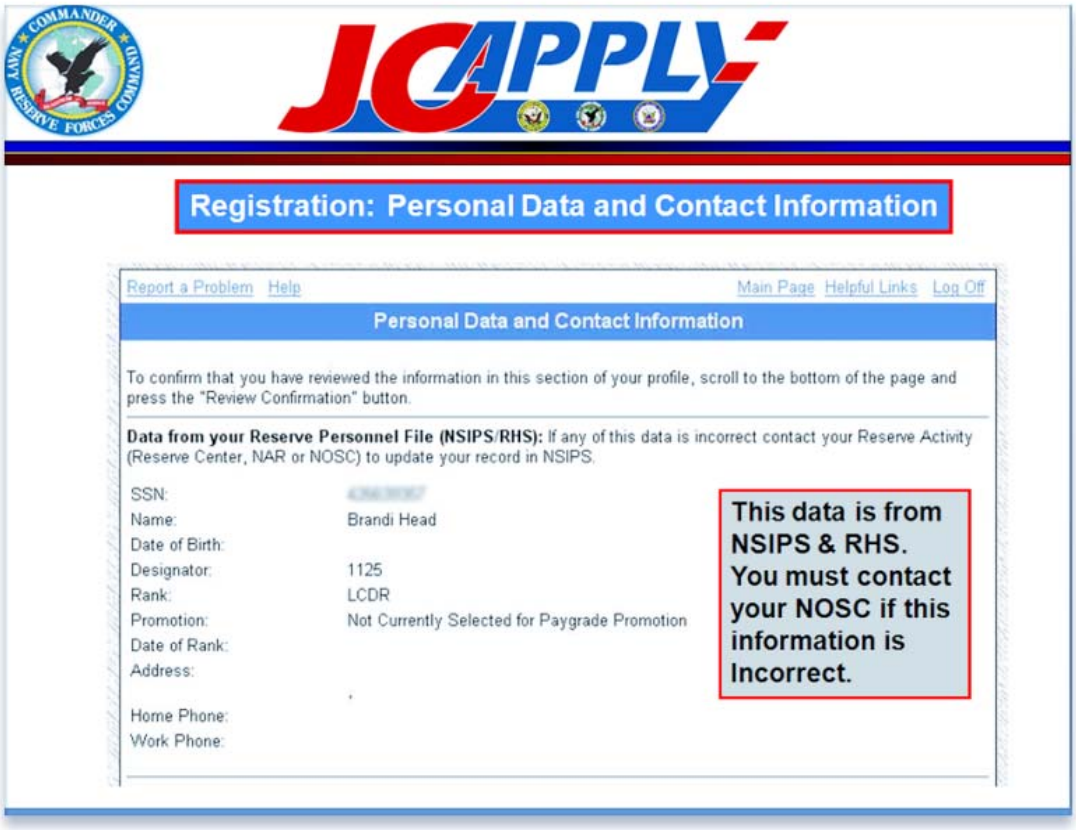

Figure 16. Personal Data and Contact Information

The Qualifications subsection (Figure 17) gives the member the ability to review their clearance, their NOBC(s), AQD(s), Subspecialties and any Education entries. The goal of this section is to ensure that a RCJOs resume is accurate before it goes before a selection board. If RCJO discovers and error there is a matrix was made for a reservist to address the mistakes.

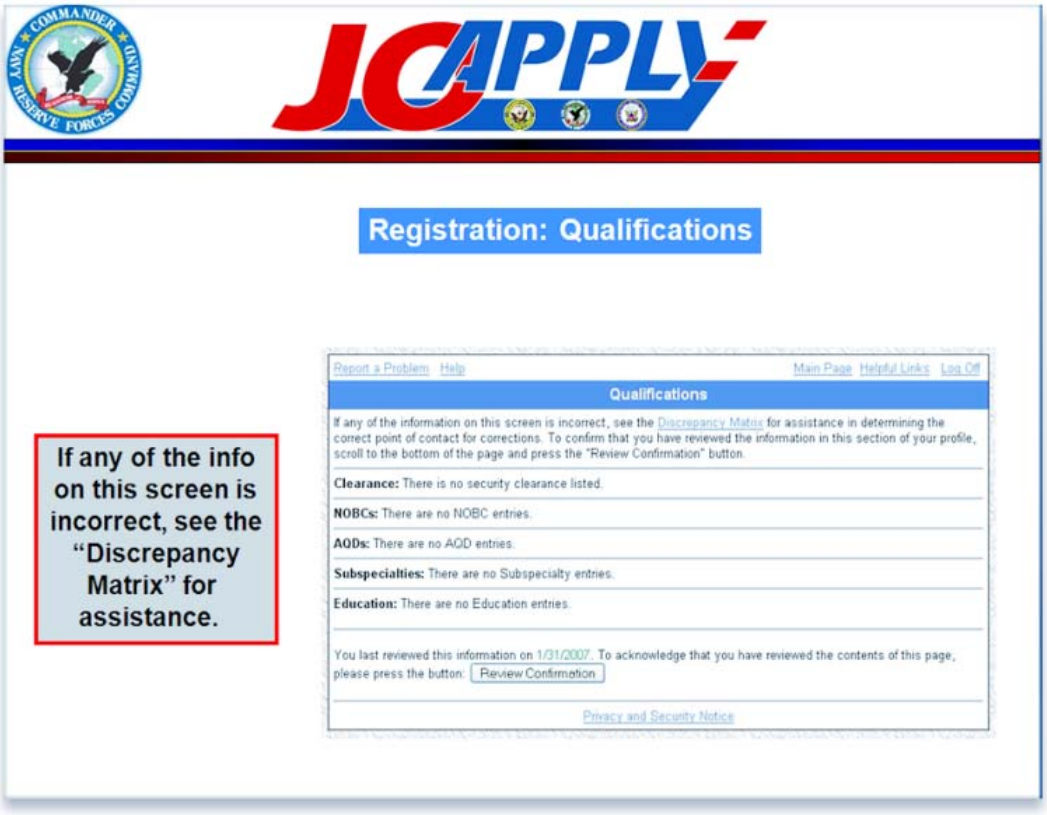

Figure 17. Qualification Summary

The second functional section, the Assignment Tools section, allows the reservist to actively search and apply for vacant billets, but, as depicted in Figure 18, a RCJO cannot view or apply for vacant billets unless they are within 12 months of their PRD and their personal information in the Profile and Registration section has to have been reviewed by the member.

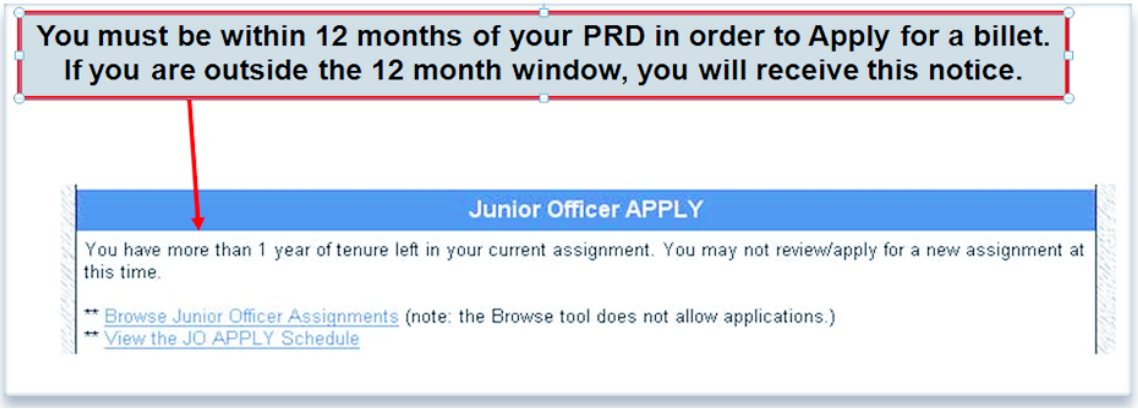

Figure 18. PRD Alert

Once a member is within their 12 month PRD window, the RCJO can search and apply for vacant billets, view their dreamsheet and view the JOAPPLY schedule.

When a RCJO navigates to search for a vacant billet by clicking on the "Search for Junior Officer Assignments" link (Figure 19) they are able to enter the following arguments for their search query: Rank, Designator, NOBC, RUIC, NRA, RCC and Program Code. The system uses the Reserve Functional Area and Sex (RFAS) codes to match search criteria with available billets. In addition to searching by the aforementioned criteria, reservists are able to rank their preferences based on assignment location as well as by specific professional attributes [17].

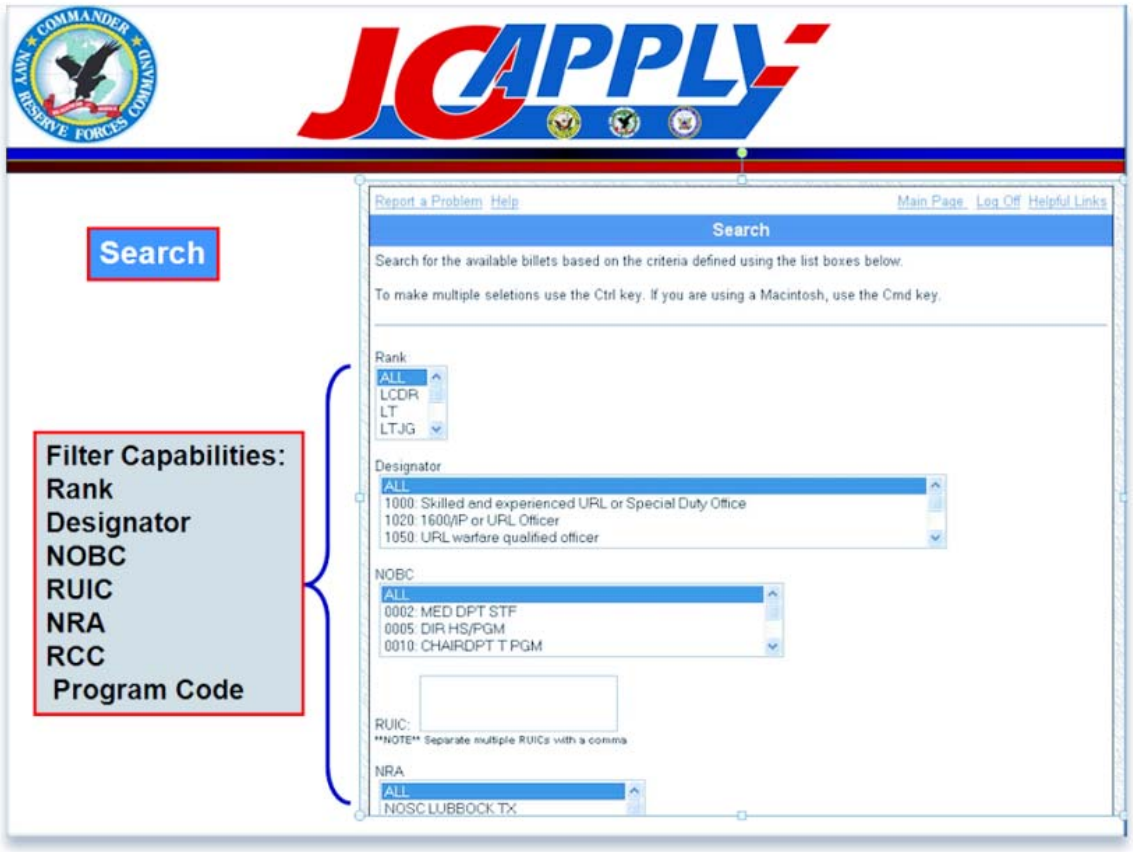

Figure 19. Search Screen Page

The search results page (Figure 20) will display the Billet Title, Unit Name, RUIC, RBSC and Designator of all the results returned by the query. The member can then choose to view the details of a billet, navigate to additional results (if applicable) or add the job to their dreamsheet. A member can select up to three billets to add to their dreamsheet [17].

Figure 20. Search Results Page

As depicted in Figure 21, when a member navigates to a specific billet's detail page, the unit information, the billet information and command information will be displayed. The unit information includes the Name, Short Title, RUIC, AUIC, the reserve activity name and the Commanding Officer's name. The billet information contains the billet identification number (BIN), the PRD, the number of applicants, description of the billet, rank requirement, command type, RSBC, VRFAS, HRFAS,NOBC requirements, drill location, drill frequency, weekend drill and security clearance requirements. The command information results section will include the supported command name, mission type, location, any comments about the billet from the supported command and comments from the commanding officer of the command [17]. This breadth of this information gives the reservist an extremely accurate representation of a specific vacant billet which ensures that it truly is a job that the RCJO is interested in.

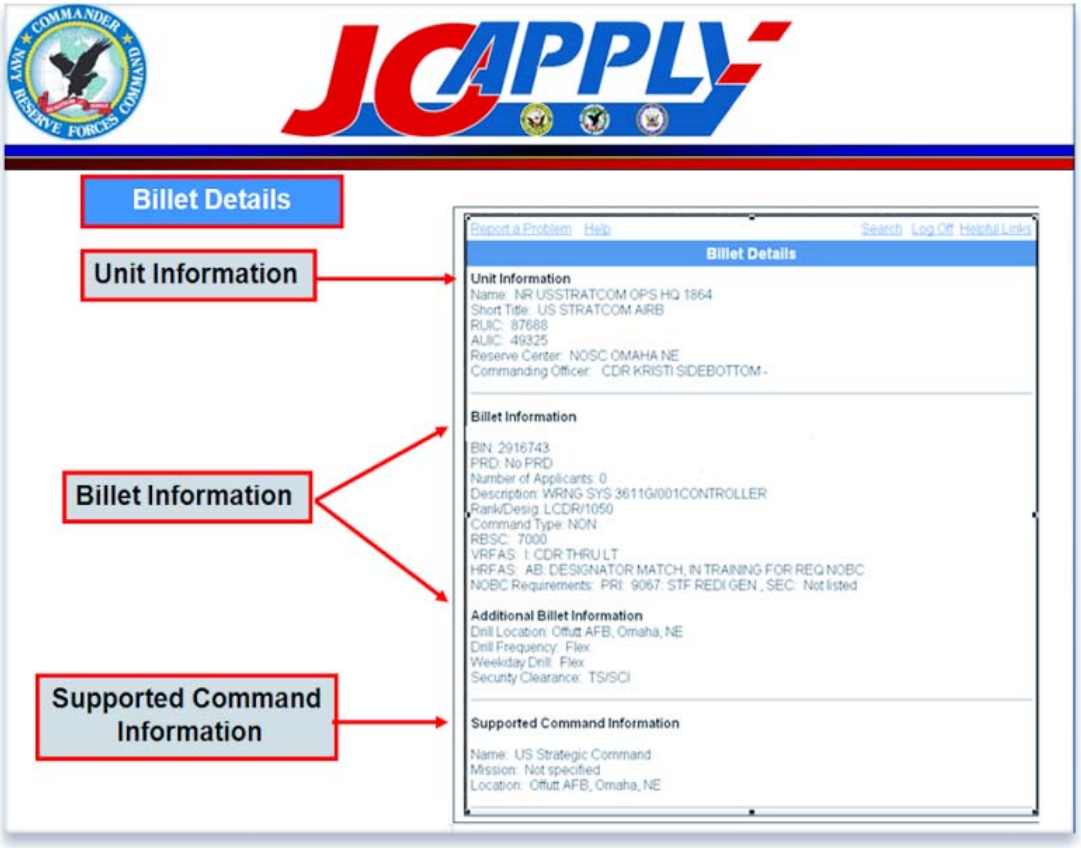

Figure 21. Search Details Page

If a member desires to apply for a billet he or she hits the apply button, and it is added to the member's dreamsheet. Once the application is submitted, the search page will update and the member will be able see the "add to dreamsheet" column updated to reflect the applied for status as depicted in Figure 22. The member will also receive a confirmation email that will be sent to their primary email address. Again, a member is only able to apply for three billets at one time, but if the member attempts to add more than three billets to his or her dreamsheet then the system will provide the user the ability to remove a billet on their dreamsheet in order to accommodate the new application.

	Add to Dreamsheet	Billet Title	Unit Name	RUIC	RBSC	Desig
Details	On Dreamsheet	OP CTLCEN BRF/N423RW111 LCAC B	NR CNO FLEET READ AND LOG	87987	7028	1000

Figure 22. Updated Billet Status Within Search Results Page

The dreamsheet will display all the billets that are in the queue of the member. As depicted in Figure 23, the dreamsheet page will display the billets name, the unit's name, RSBC, designator and rank of the billet. It will also provide the member with the ability

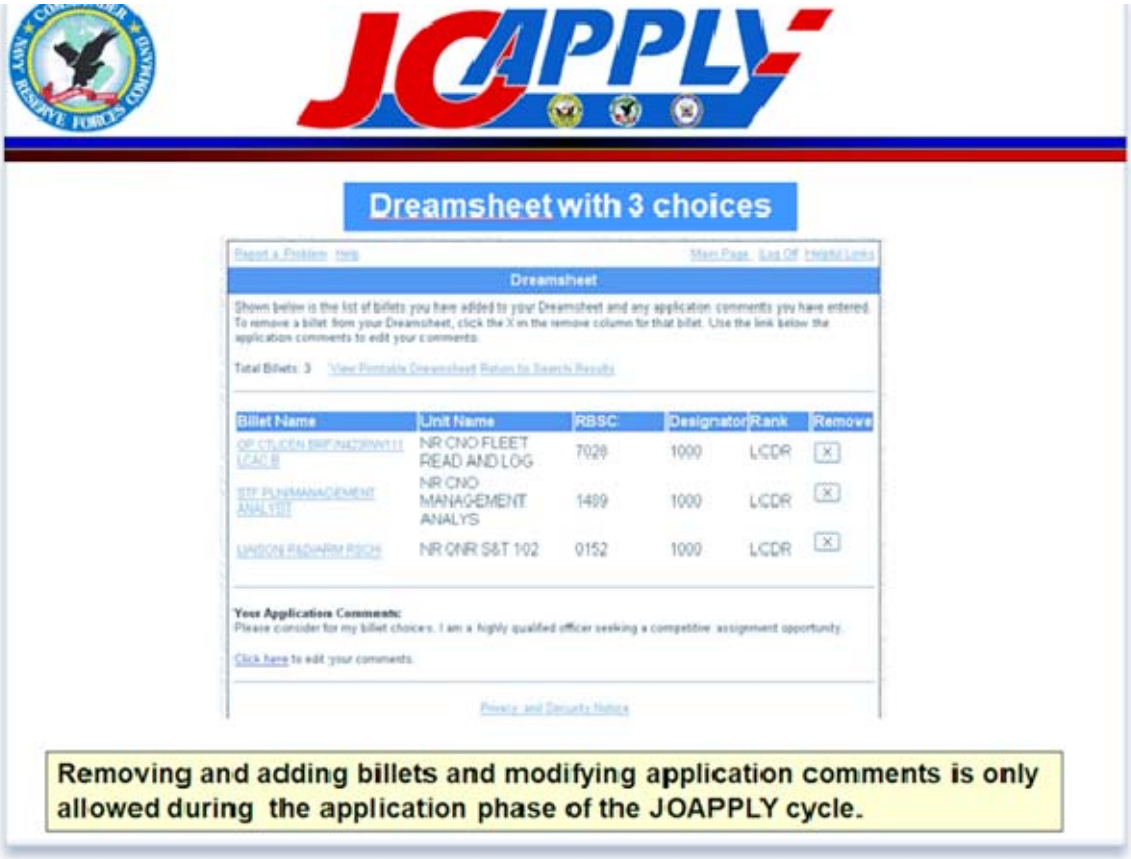

Figure 23. Dreamsheet page

to remove a billet from their queue as well as include comments for the detailer and command representatives to review. A member can only modify or delete billets during the application phase of the detail cycle. Once the application phase has closed, the RCJO

must wait for the OSO review cycle and the Assignment Coordinator review cycle to complete before learning the results of the application process. Whether selected or not the RCJO will receive an email informing them of the results of the application process. If the RCJO was not selected the process begins over again, and if the candidate was selected then orders will be sent to the gaining and losing commands, as well as, to the member.

The acronym RCPM is synonymous with OSO. An OSO's homepage (Figure 24) has the similar look and feel of the RCJO's homepage, but the management role provides the OSO with greater latitude within the system due to requirement of their managerial position. Again there are two function sections, in this case the profile and registration section is not as dynamic because the required information is captured during the initial access process. The section does provide the OSO with the ability to update contact information, as well as, access CNRF N12's administrative tools.

Figure 24. OSO Homepage

The OSO Assignment Tools functional section is much more significant, and will be discussed in greater detail. When the OSO follows the “Search Jo APPLY Billet” link the OSO search page will be called. As depicted from Figure 25, from the search page an OSO can search for an individual billet by the Billet Identification Number (BIN), or the OSO can search for a group of billets based on their RUIC or the OSO can search for an individual billet by using the descriptive search criteria to discover the billet of interest. The OSO is also able to filter by whether the job was advertised or not and whether the vacancy has applicants or not.

Figure 25. OSO Search Page

Once the submit button is entered a search results page is generated which will provide the OSO with the results of his or her query, as well as, provide further navigation. Figure 26 depicts the results page and the fields that are editable. The OSO is able to edit both the Additional Billet Information and the Supported Command Information, but is unable to update the core billet information that is extracted from the RHS database. Within the Billet Information section, the number of applicants currently in the queue for that particular billet identified by the query will also be displayed. The detail page also shows the OSO if a billet will be displayed in the next advertisement cycle.

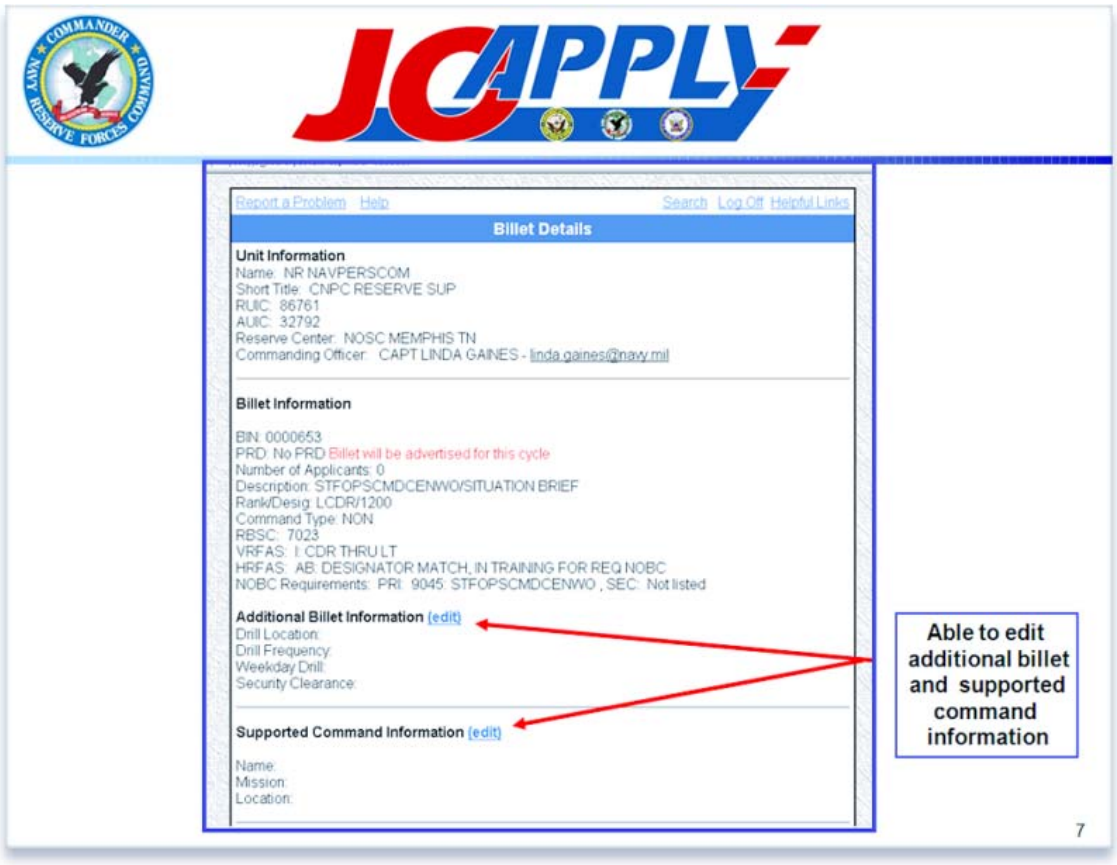

Figure 26. Single Billet Results Page

From the billet results page the OSO is also able view the pool of candidates that have applied for the vacant billet. As Figure 27 depicts, the OSO is then able to rank and post comments on each candidate, which will be reviewed by the Assignment Coordinators during the selection process.

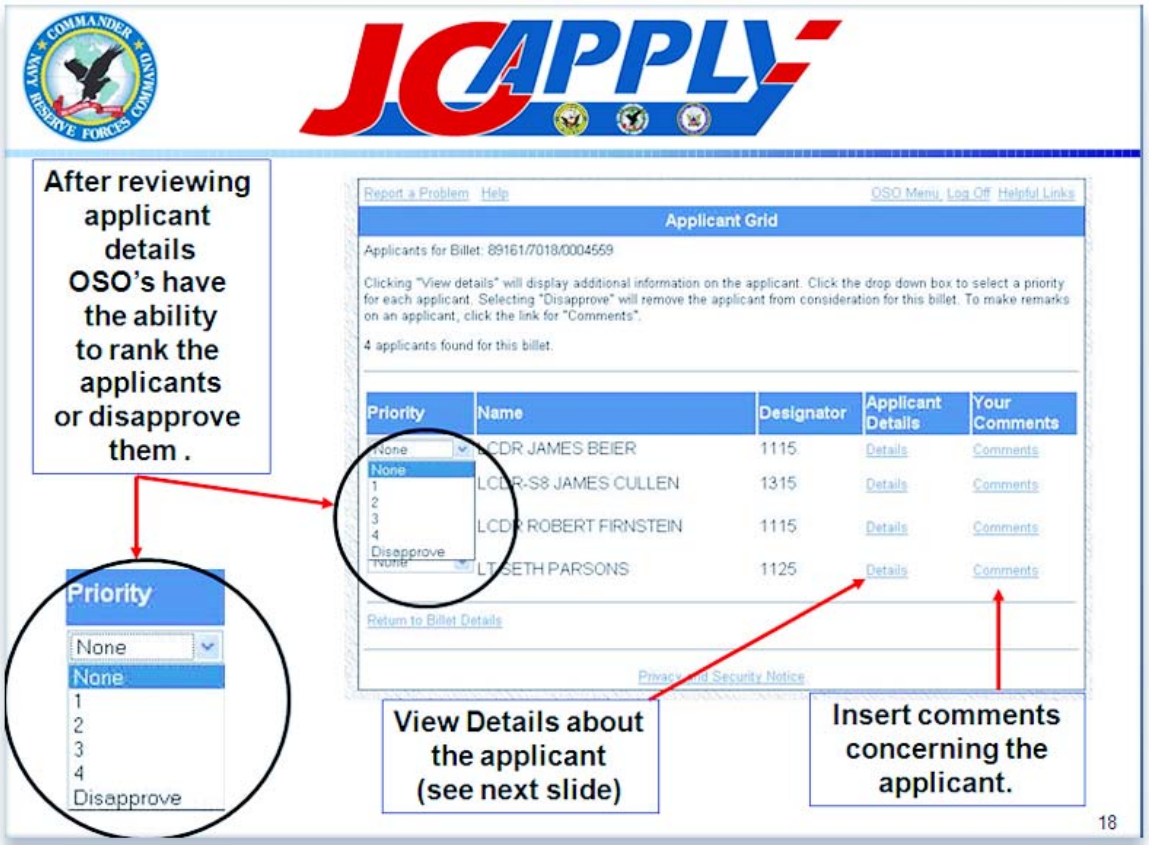

Figure 27. OSO Candidate Pool

The Reserve Component Detailers have very little functionality within the system. They are able to perform a generic search form the APPLY homepage. This search will provide them with a details page off all the empty or soon to be empty billets in the Naval Reserve. If they find a billet that a perspective candidate can fill, they are instructed to call a point of contact at NRFS N12. This POC will then be able to gain the new member which then allows the member to access the system. This limited functionality severely limits the usability of the system for detailers.

4. JOAPPLY Conclusions

JOAPPLY has many attributes that are desirable for the next Marine Corps Reserve Billet Advertising System. Billets are tied to Billet Identification Number; the system uses this attribute to automatically advertise in the system when they are within 12 months of them being vacated. Members are able to see, and are forced to update, all

of their personal and professional information, which keeps the members actively engaged in managing their careers. Members are also able to dynamically search and apply for jobs that interest them; this induces and promotes harmony during the process. On the management side, OSOs and COs are able to rank and provide feedback on potential candidates. This helps commands get the right sailor for the job being advertised, which ultimately will improve the readiness of the unit.

The system also has many undesirable attributes. First the system has little to no documentation. And what little documentation that does exist doesn't correlate to the system that is being currently utilized. Second, the system provides very limited functionality for the detailers, which makes the system basically useless to them. Which leads us directly to the third point; access is limited to members of the active Naval Reserve and it provides little access to a potential recruit. Specifically if somebody is interested in joining the Naval Reserve they cannot access the system to browse the available billets. They have to go to a recruiter, who also doesn't have access to this system, so it is almost impossible for some to easily identify potential billets of interest. Finally, the system was designed to curtail the good old boy system by preventing preferential treatment of candidates by providing an unbiased application process. Unfortunately the current design of the process makes it easy for candidates to be discriminated against due to familiarity of the OSO with other candidates. There is no checks and balance system to ensure that the OSO is being equitable and fair when ranking members.

C. MONSTER.COM AND USAJOBS.COM

Monster.com, founded in 1994, is a twelve year old multinational company that specializes in online recruitment of potential applicants for vacant positions advertised by a plethora of different employers. In its current configuration the corporation has 17 unique job search networks and 40 international sites which encompass both commercial and academic institution portals [18]. This congregation of resources has created an impressive data warehouse of potential candidates. In fact, as of June 2007, Monster and its subsidiaries housed over 80 million unique job seeker resumes and 50,000 more are

added each day [19]. The corporation has also worked diligently at maximizing its brand recognition through a complex web of partnerships and community sites.

According to a Taylor Nelson Sofres (TNS) survey performed in the fourth quarter of 2006, their efforts have proved fruitful as 9 out of 10 respondents to a market survey recognized Monster.com and its mission [19].

The remainder of this section will focus on one of Monster subsidiaries: USAJOBs.com. USAJOBS.com is a good example of a potential solution that Monster.com can provide the Marine Corps in its endeavor to produce the next iteration of RDOL. USAJOBs.com was built as part of the E-Government initiative introduced by the Bush administration. Its goals were to provide "state-of-the-art on-line recruitment services", serve as a single sign on application point, to provide a competitive advantage for government agencies trying to hire top talent and to improve the effectiveness of the federal government's job recruiters [20]. These provide the Marine Corps with a Product Line Architecture in which it can achieve its overarching goals of Marine Corps for its next system, so it makes it a natural choice to compare and contrast.

1. Technologies Leveraged by USAJOBs.com

At the core of USAJOBs.com is an application titled Recruitment One-Stop (ROS). This application processes the requests and information submitted by the different federal government agencies by calling the appropriate Monster.com resource. Specific Monster.com resources deployed in this project include proprietary technologies such as Monster Career Center, Monster Officer HQ and its job search engines [20]. These resources are melded together with functionality created exclusively for the project in order to meet the needs of the federal government. The use of existing technologies with new technologies has created a dynamic and professional that has seamless integrated commercial products with governmental agencies legacy systems.

ROS is connected to the government agencies through a proprietary middleware application titled Monster Business Gateway (BGW). As exhibited in Figure 28, BGW is the only interface between the ROS and the government sites. It uses basic message protocols and standards to facilitate communication between the different systems.

Specifically it uses SOAP XML requests over HTTP/HTTPS and FTP/FTPS to communicate between the BGW and the Agency applications [20]. The protocol utilize depends on the data size and the data latency requirements of the function using the service. The data itself is stored in a database schema of the users choice. According to

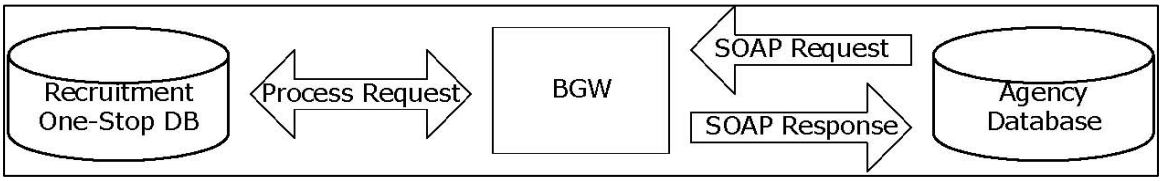

Figure 28. Depiction of Monster.com Business Gateway

Dave Concordia, Monster's Director of Development for Government Solutions, reiterated that Monster can support any type of database from relational databases to object oriented databases and anything in between [21]. Monster periodically updates its database schemas to reflect the new needs of its customers as well as to keep pace with technological advances. But most of these upgrades are backward compatible with current systems which make them transparent to the user.

As shown in Figure 29, the Government Agencies are required to use the World Wide Web to transfer information to and from USAJOBs.com. Using the web as the medium makes data security and integrity paramount. Monster employs a two pronged approach in its attempt to meet these security needs. First the data is transmitted between the BGW and the Agency systems via HTTPS or FTPS protocols. The second security measure implemented by Monster is the incorporation of an encrypted Customer Access Ticket (CAT) into the header of the SOAP message. The CAT uniquely identifies, verifies and authenticates a user. Monster distributes and manages a master CAT list, but the content of the header is managed by outside agency. Once a user has been authenticated, Monster verifies that the individual user has the proper licenses and permissions to complete the transaction requested [20].

2. USAJOBs Employer Functional Processes

Employers are provided a CAT, access and authority to manipulate advertisements from the agencies in which they are employed. Monster uses these credentials to ensure that they employer has the rights to perform add, delete or modify to advertisements within ROS. Employers have the ability to add single or batch advertisements. Once the advertisements are posted, Employers have a robust set of tools to monitor activity and managing their applications.

For example, Employers are notified when an application is submitted for one of their advertisements. Figure 29 depicts the flow of the application from the ROS to the Agency itself. This process provides positive feedback for both the employer and the applicant that an application was received and has been processed. In addition to the email, the employer can also create a custom message that is displayed to applicant after an application is received. One of the disadvantages to this system is that responsibility for catching duplicate application submissions is delegated to the agencies; ROS has no means to determine if the application is a duplicate.

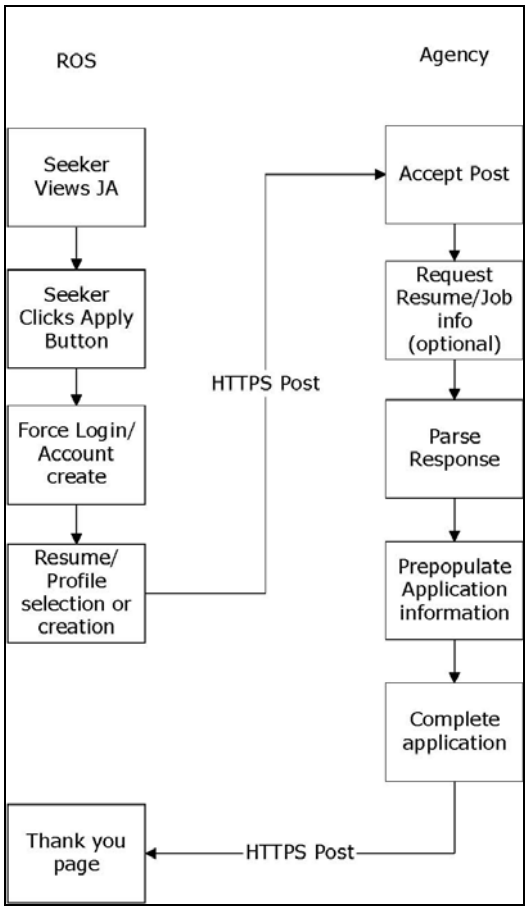

Figure 29. Application Process Path

3. USAJOBs Applicant Functional Processes

Once an applicant has found a job of interest he or she may submit a resume to apply for the vacancy. As exhibited in Figure 30, USAJOBs resume builder is a four page process which covers four areas: personal information, the second area captures a member's experience and education, the third area allows the applicant to enter references and any other information that may be pertinent and the forth area allows the applicant to review, set interview availability schedules and error check the resume before posting [22]. The applicant has the choice on whether to allow his or her private data to be publically available for employers to search. Applicants can also delete or modify a resume at any time. This resume process was condensed to capture what was

relevant to federal job recruiters. This is a significant point because it amplifies that that the resume can be designed to focus on the attributes the Marine Corps is genuinely interested in.

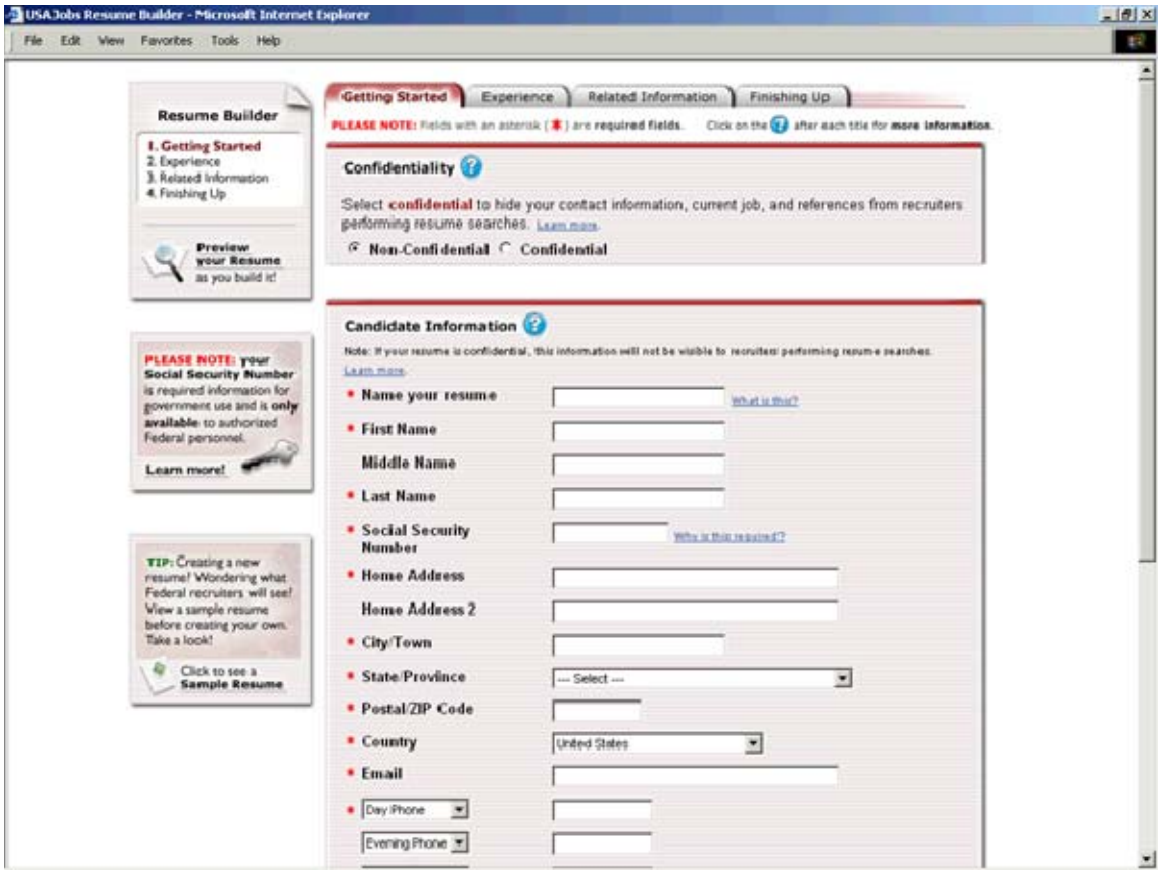

Figure 30. Resume Builder Page

Once the applicant registers and builds his or her resume they can begin using the functionalities of the site or start searching for a job. A member can search for a job manually or virtually. Virtual searches are done by creating a "search agent" who continuously runs a query of your design against USAJOBs job repository. An applicant can create up to five search agents to run simultaneously. As depicted in Figure 31, the applicant can choose provide the following search criteria: by location, by job category, occupational series, by agency, by salary range, by job experience or desire, by position title or by keyword. If a positive search result is returned the site emails you the positive

match within a prescribed amount of time that the user sets. By having five unique search agents an applicant can cover a wide spectrum of job interests [23]. Once the search agent

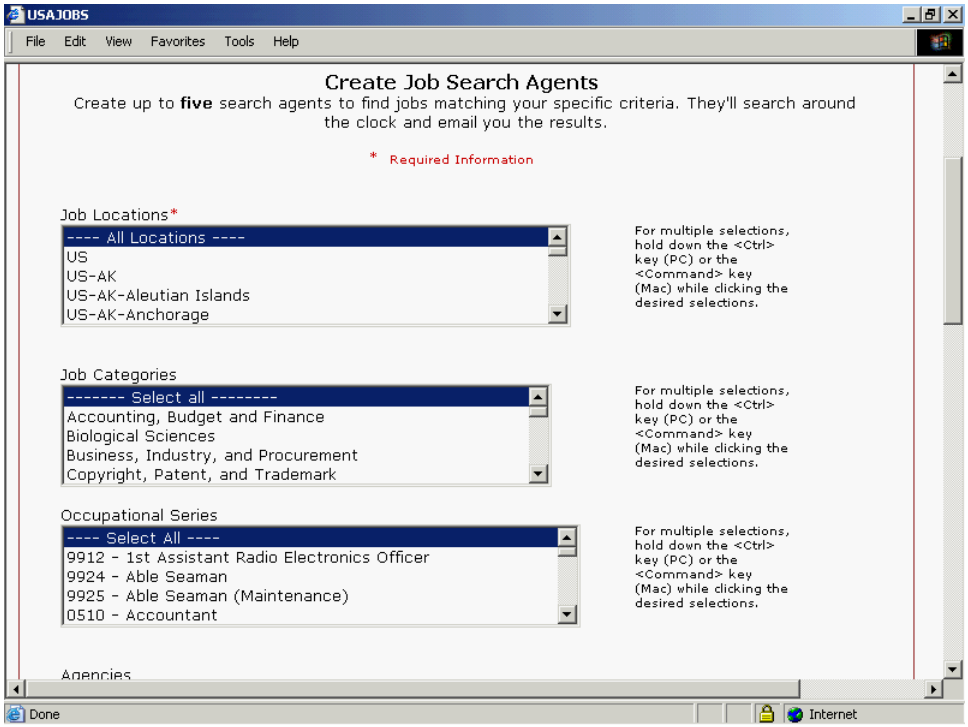

Figure 31. Job Search Agent Selection Page

is created the user can actively manage them from a customized Current Job Search homepage. This homepage will allow you to view, modify, delete or add additional Job Search Agents. These attributes and functionalities match significant core requirements for the Marine Corps proposed system.

The applicant can also search for jobs manually. The member has the ability to search by keyword, by agency, by Federal Series code, by job detail (location, salary, combination etc.), or by senior executive search. The results of the query are presented by either the age of the advertisement, newest to oldest, or by the keyword relevance [24]. As shown in Figure 32, the query results give the title of the position, the agency that is hiring the position, and where the vacancy is located geographically. A member can click on the job title for a detail description of the requirements of the vacant position. At the

bottom of the detail description of the job posting is the information on how to apply for the position. Due to system limitations, whether the agencies or Monsters, you can not

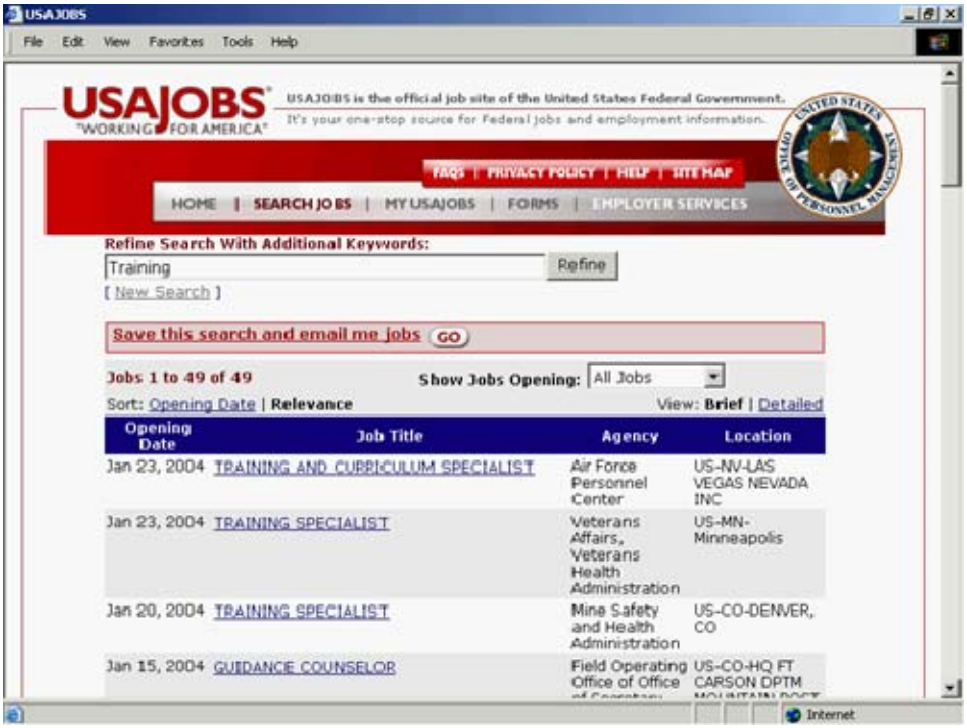

Figure 32. Manual Job Search Results

apply for every position online through USAJOBs.com [25]. If the applicant is unable to apply through USAJOBs.com, the applicant will either have to mail via US post or follow an external link to the agencies site to finish the application. A member also has the ability to email the job listing to a friend or print a hard copy if they so desire. Once the member has applied for the position, he or she has the ability to track the application as well as view their application history for the past 18 months [25].

4. USAJOBS Conclusions

Monster.com solutions provide users and organizations with many built in advantages that match the Marine Corps desired quality attributes. First, the core technologies of their product remain the same, which provides the system with innate ability to reuse many of the technologies. Second, being a turnkey solution, the product

can be up and running in a much shorter period than building a product from scratch. USAJOBs.com took less than six months to deploy the first iteration of the product. Three, the life cycle a cost of the product are lower than those of a proprietary system as Monster updates and maintains the core part of the system as part of the contract. Four, the product will be exposed to much broader market of the consumer base that the Marine Corps is trying to reach as the product will be crossed advertised in other Monster products and communities.

Monster does have a few disadvantages. The initial cost, up front will be higher than building a system from scratch. Second, security, though addressed, is weak at best and seems to be an afterthought in the process. Third, the model assumes that have access to the web and that it will always be available. This is not unreasonable, but redundancy needs to be built into the system to guarantee the connectivity that Marine Corps desires. Forth, ROS has no built in capabilities to recognize duplicate applications. The onus for this task falls squarely on the shoulders of the different agencies which could lead to redundant applications and dirty data contaminating their data repositories. And last, the Marine Corps has many legacy systems that do not have XML messaging capabilities which is the cornerstone to this model. This will require additional middleware that was not recognized in the model presented for USAJOBs.com.

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IV. REQUIREMENTS ANALYSIS FOR NEXT GENERATION MARINE CORPS BILLET ADVERTISEMENT SYSTEM

This chapter will focus on identifying the Marine Corps requirements for their next reserve billet advertisement system. One of the primary reasons the Marines current billet solicitation system failed was due to the lack of requirements analysis at the inception of the project. Specifically, the requirements were defined by a small group of subject matter experts rather than conducting a comprehensive requirements analysis with all the applicable stakeholders. This led to a fragmented and incomplete system. To ensure that this doesn't occur again, we made a concerted effort to make sure that all of the stakeholders were included in the requirements analysis. This was done by conducting phone interviews, analyzing systems with similar functionality, as well as, using a focus group facilitated by a professional system designer. These efforts yielded a robust set of documents in which we were able to leverage during our analysis.

The results of our requirements analysis gave us a firm understanding of what the stakeholders required, and we expanded upon these results by breaking them down into the Data Business Requirements and the Process Business Requirements of the next reserve billet advertisement system for the Marine Corps. We discuss first the Business Data Requirements which allowed us to build the logical data model of the system. This logical model will provide the blueprints for the implementation of the next generation system. After we completed the logical model, we proceeded on to identify the Business Process Requirements. During the discovery of the process requirements, the system's Context Data Flow Diagram (CDFD), Functional Decomposition Diagram (FDD) and its associated Use Cases and Process Models were produced. The process models provide the building blocks to construct the system's sub-system diagrams. The combination of these two requirements, the data and process requirements, will give the Marine Corps a solid foundation on which to build their next generation system.

This chapter is organized in the following manner: First we define and depict our data model, second we design the CDFD, third, using the CDFD as a guide, we design the systems FDD and its associated components and finally we present the four sub-system diagrams.

A. DATA MODEL

After careful analysis of all the information gathered a root data model was constructed. This is an important step because a data model identifies the underlying data structure for the next system. There are several ways to model the data structure, but we used the entity relationship diagram (ERD) method. We chose the ERD methodology because it not only identifies or captures the data entities that the system needs to capture, but it also defines the relationships between those different sources of data [2]. The core ERD for the Marine Corps Reserve is depicted in Figure 33. As with any data model, this should not be considered the conclusive model for the project, and it should be

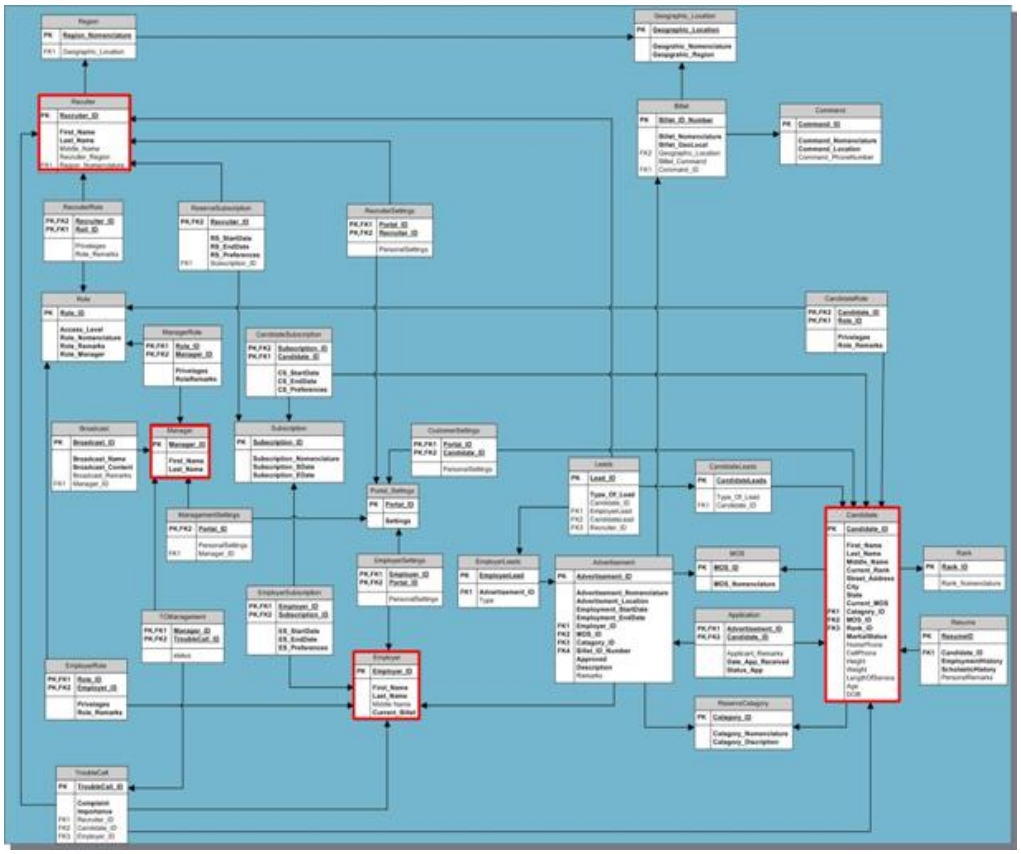

Figure 33. ERD Data Model

noted that data structures need to be continually modified to reflect the current state of the system that it supports. To create this ERD, we first combed through all of our interviews and notes from our requirements analysis which allowed us to discover our main entities, their attributes and the relationships between the different entities. We then normalized the rough data structure to second normal form.

The results of our analysis yielded four main sub-groups within the body of the ERD: Candidates, employers, managers and recruiters. Candidates are Marine Corps Reservists that are actively using the billet advertisement system to seek out employment opportunities. Their personal data is automatically populated in the model from an external Marine Corps Enterprise System. The database will also capture data on the candidate's personal section of his or her Reserve Qualification Summary, their application history, their personal web-portal settings, as well as, their current and historical subscriptions to employment search engines.

Employers are any Marine Corps or external activity that wants to advertise vacant employment opportunities within the Marine Corps Reserve billet advertisement system. The database will capture the employer's personal information, their historical and current advertisements, their personal web-portal settings, as well as, their historical and current candidate search subscriptions.

Recruiters are any Marine Corps Reserve Recruiter who leverages the system to identify potential candidates and employment opportunities for prospective recruits. The database will capture the recruiter's personal information, their assigned recruiting region, their personal web-portal settings, as well as, their current and historical candidate search and employment search subscriptions.

The four main sub-groups are tied together via relationships that were identified during the requirements analysis. We will expand upon the main relationships that exist between each of the main entities identified starting with the Candidate's relationships. One of the primary reasons a Candidate uses the system is to search for employment, therefore a significant relationship exists between a Candidate and an Employer. Specifically a Candidate can submit multiple applications for an advertisement, and conversely an advertisement can have multiple candidates applying for it; therefore, these

two entities have a many-to-many relationship. In order to apply for a vacant billet, a Candidate must have a current resume. A candidate can have many resumes, current and historical, but a resume only contains the information of one candidate. A candidate also can have only one MOS, Rank and Reserve Category while all three of these entities can be associated with multiple candidates. To assist the Candidate in searching for desirable employment, they will be able to subscribe to search services. A candidate can have multiple subscriptions and a type of subscription can be assigned to many candidates. Any active subscription for a Candidate generates leads of interest. A Candidate can have many leads and a generated lead will be disseminated to any Candidate whose subscription settings match the lead's attributes; therefore, it is a many-to-many relationship. A Candidate can also submit a trouble call, but a trouble call can have only one creator. In order to use any of these resources that Candidate has to be assigned a user role by a Manager. A Candidate can be assigned multiple roles, active and historical, and a type of role can be assigned to numerous Candidates.

An Employer's relationships focus around the management and maintenance of billet advertisements. An Employer can create numerous advertisements, and each advertisement can have multiple applicants. Therefore, a many-to-many relationship exists between an advertisement created by an Employer and the applications submitted in response to the advertisement. Each advertisement also correlates to only one vacant billet, but a billet over its life may have many advertisements. Each billet is assigned to only one command and each command can have multiple billets. To assist the Employer in searching for candidates to fill their vacant billets, they will be able to subscribe to search services. An Employer can have multiple subscriptions and a type of subscription can be assigned to many Employers. Any active subscription for an Employer generates leads of interest. An Employer can have many leads and a generated lead will be disseminated to any Employer whose subscription settings match the lead's attributes, therefore it is a many-to-many relationship. An Employer can also submit a trouble call, but a trouble call can have only one creator. In order to use any of these resources an

Employer has to be assigned an Employer role by a Manager. An Employer can be assigned multiple roles, active and historical, and a type of role can be assigned to numerous employers.

At the heart of the Recruiter's relationships is the active search for viable candidates to fill vacant billets that exist in the Marine Corps. To assist the Recruiter in these efforts they will be able to subscribe to candidate and billet search services. A Recruiter can have multiple subscriptions and a type of subscription can be assigned to many Recruiters. Any active subscription for a Recruiter generates leads of interest. A Recruiter can have many leads and a generated lead will be disseminated to any Recruiter whose subscription settings match the lead's attributes, therefore it is a many-to-many relationship. A Recruiter can also submit a trouble call, but a trouble call can have only one creator. In order to use any of these resources, a Recruiter has to be assigned the appropriate role by a Manager. A Recruiter can be assigned multiple roles, active and historical, and a type of role can be assigned to numerous Recruiters. A Recruiter is also assigned to a geographical area of responsibility, but a geographical area can have multiple recruiters assigned to it.

The Manager's relationships are tied to their primary responsibilities of role management and system maintenance management. A Manager is responsible for assigning roles to the user of the system and they can also be assigned multiple roles, active and historical, and conversely a type of role can be assigned to numerous Managers. Managers are also a responsible for managing the trouble call queue for the system. A manager can be responsible for multiple trouble calls, and a trouble call can have many managers who are responsible for it over its life. Each Manager is able to broadcast numerous system messages, but each message can only be created by one Manager.

B. CONTEXT DATA FLOW DIAGRAM

After defining the data model, the next step in our prescribed methodology is to identify and model the Business Processes. Process modeling provides stakeholders with a firm understanding of the structure and flow of data through systems construct from the view point of the system users and owners [2]. The goal of these models is to remove any

biases or preconceived notions that were created or formed based on the current iteration of the system. For this analysis this is particularly important, because the current system lacks a sound foundation and was poorly built, which has led to many ill conceived opinions about the system and its future. These models will also reduce the risk of missing business requirements, because it will allow us to provide stakeholders with a pictorial representation of the proposed system which will afford them the opportunity to review the proposed system in detail to ensure that none of their requirements are missed.

The first component of the process model that we designed was the Context Data Flow Diagram (CDFD) which is depicted in Figure 34. The CDFD provides the stakeholders with an overview of the scope of the system. We created this diagram by viewing the proposed system as a "black box." From this perspective, in order to determine what inputs the system, we asked during interviews what external systems and inputs did the new system need to respond to. After determining what the inputs were, we then identified the outputs and external data stores of the system were by asking users what responses must be produced by the system and where these responses are stored. It is evident from this model that the underlying structure identified in the data model holds true. Specifically, there are four significant external users of the system: Candidates, Applicants, Employers and Recruiters. At this level, the functionality defined in the data model for the Candidate is encapsulated by the Candidate and the Applicant Modules in the CDFD. The Candidate, in this case, represents a potential recruit who wishes to “see” or “browse” for opportunities that exist within the Marine Corps, and an Applicant represents a Marine who is already in the system and is actively applying for vacant positions.

The CDFD also depicts the system’s ties to several external Marine Corps data repositories and legacy systems, as well as, identifies areas of potential growth. The Monitor Module was included in the CDFD in response to input provided during interviews described future capabilities that may be incorporated into the RBAS system in the future. Currently the Marine Corps Reserve does not have dedicated monitor for reservists, but may so in the future. That being said, our intention from this point forward is not to include this module in our analysis, but we decided to leave it in the CDFD to

emphasize the importance of ensuring that the Marine Corps building or purchasing a system that has the capacity to grow dynamically with the ever changing needs and demands of the Marine Corps Reserve.

A few examples on how external systems and inputs interact with the system will make the relationships that exist between the different systems more apparent and easy to understand. Candidate external systems will be able to will be able to dynamically search the RBAS for billets that match the criteria entered into job search query, and RBAS return the results off the query in turn. An Applicant can dynamically manage their application process, as well as, use automated job search services provided by RBAS. The Employer external systems have the capability to actively manage advertisements, and leverage candidate search tools. The Recruiter external systems are provided with a robust set of billet and candidate search tools that will expedite the hiring process.

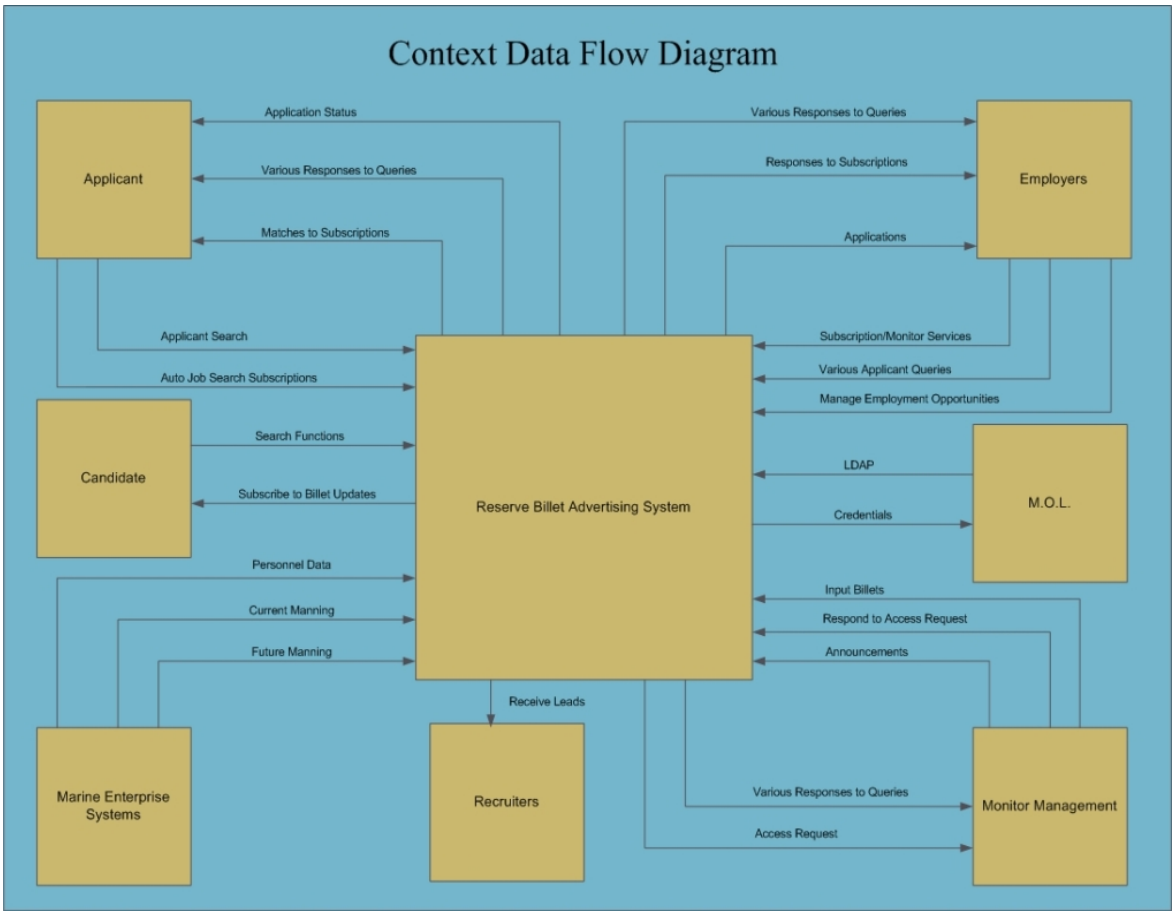

Figure 34. RBAS Context Data Flow Diagram

The M.O.L. module represents Marine Corps legacy systems that will provide security services, as well as, data conduits to the RBAS system. The Monitor module will provide a Marine with a robust set of tools to aggressively manage their careers in concert with a Marine Corps monitor.

C. FUNCTIONAL DECOMPOSITION DIAGRAMS

Now that the overall scope has been defined and is understood, the next process model built was the Functional Decomposition Diagram. This model expands the "black box" that was depicted in the CDFD into a construct composed of its sub-systems which describe the proposed system in detail. Each sub-system has at a minimum of two child processes or modules [2]. The "children" of each sub-system provide the stakeholder with a comprehensive view of the different components or processes required of each the sub-systems. Within each child module the model becomes even more granular as each module is further broken down into specific processes or functionalities required for that specific child module to accomplish its designed functionality. Each of these "process or functionalities" was identified during the requirements analysis and they are defined in detail in use cases and event diagrams. A list of the use case glossary can be found in Appendix A, and the actual use cases themselves are presented in Appendices B through E. The four distinct sub-systems discussed in the CDFD section will now be expanded upon. We will elaborate on the Employer Sub-System first, followed by the Candidate Sub-System, the Recruiter Sub-System and concluding with the Management Sub-System.

1. Employer Functional Decomposition Diagram

The Employer Functional Decomposition Diagram (EFDD), depicted in Figure 35, contains four children modules: Process Advertisements, Generate Managerial Reports, Target Potential Candidates and Manage Web Portal Settings.

The Process Advertisement module contains eleven specific use cases which are presented in Appendix E. This module focuses on the manual and automated management of advertisements within the system. Within this module an employer has the ability to manually create, review, update and delete any advertisement. The RBAS

system will also automatically post and delete billets when they meet prescribed set of business criteria. To ensure that the billets generated automatically by the RBAS system are viable, the employer responsible for billet management will be provided a two week window from the inception of the automatically generated billets to review and approve the advertisements. If the employer is negligent in this responsibility and fails to approve or disapprove the billet within the two week window, the billets will be posted without the employer's approval. This module also provides the employer with ability to manage the applicant pool for specific advertisements. This includes providing the ability to review the candidate pool, hire a candidate, reject a candidate, manage leads, as well as, communicate with entire applicant pool.

The Generate Managerial Reports module will provide the employer with ability to generate a user defined report, advertisement history report, an advertisement details report, an advertisement response report and a billet expiry report. The billet expiry report is generated automatically and will be driven by temporal events at 30, 14, 7 and -14 days of the expiration date of the advertisement.

The Target Potential Applicants module allows the employer to create, review, update and delete subscriptions that actively search for potential candidates. These subscriptions are an automated service that provides the user with the matching results of employment queries that are applied continuously against the RBAS data repository. These services are voluntary and must be signed up for by the candidate. This module also allows the employer to manually search for a specific candidate, as well as, contact them.

The Manage Web-Portal module allows an employer to create, review, update and delete an employer's personal web portal content. This allows the employer to dynamically change their environment to suit their needs and desires. This customizable interface would allow them to subscribe to Really Simple Syndication (RSS) broadcasts which include blog entries, news headlines, and podcasts in a standardized format. They will also be able to modify their background, install web widgets and view results of RBAS subscription notifications.

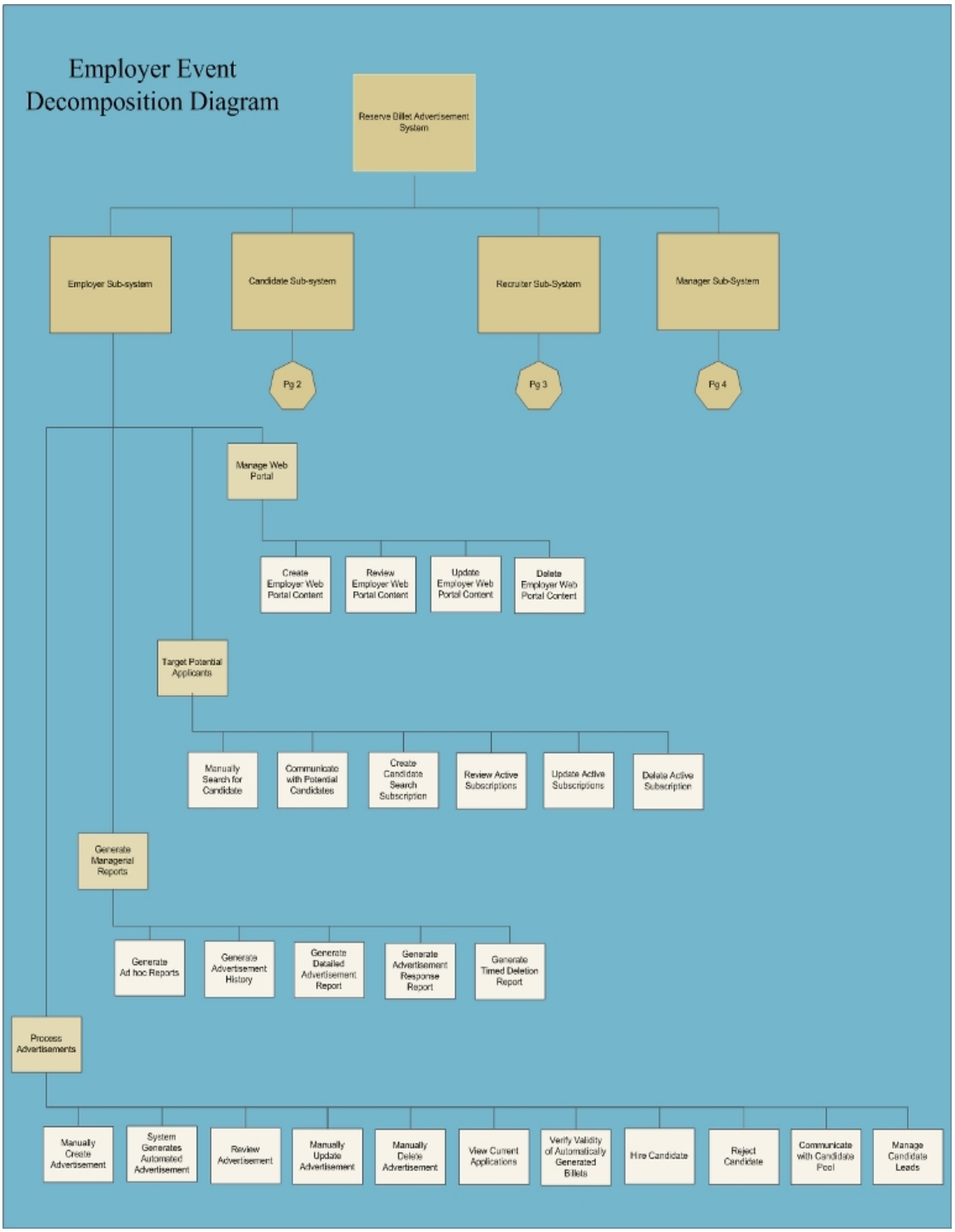

Figure 35. Employer Functional Decomposition Diagram

2. Candidate Functional Decomposition Diagram

The Candidate Functional Decomposition Diagram (CFDD) is depicted in Figure 36 and contains three children modules: Manage Personal Information, Apply for Vacant Positions and Employment Search Services modules.

The Manage Personal Information module contains eleven use cases, which are presented in Appendix B, and it focuses on the candidate's career management tools. Within this module the candidate is allowed to create, review, update and delete personal information that is contained in their Reserve Qualification Summary. This information that is modifiable is limited to the candidate's employment history and their personal comments, because the rest of the data is autopopulated from Marine Corps Enterprise systems. If the candidate discovers an error within the autopopulated data he or she will have to utilize official Marine Corps channels to get it updated (S-1 or MOL). This module provides the candidate with the ability to create, review, update and delete their personal web-portal settings. This module also allows them to participate in community events such as blogs, webinars and other web driven resources that the candidate may desire to use. External Marine Corps services and the candidate's ability to manage employment leads also reside in this module.

The Apply for Vacant Position module allows a candidate to create, review, update and delete applications that they submitted. The candidate can also review their application history, the application pool for an active advertisement, contact the employer of an active advertisement, as well as, manually search for future vacant billets.

The Employment Search Services allows a candidate to create, review, update and delete employment search subscriptions. These subscriptions are an automated service that provides the user with the matching results of employment queries that are applied continuously against the RBAS data repository. These services are voluntary and must be signed up for by the candidate.

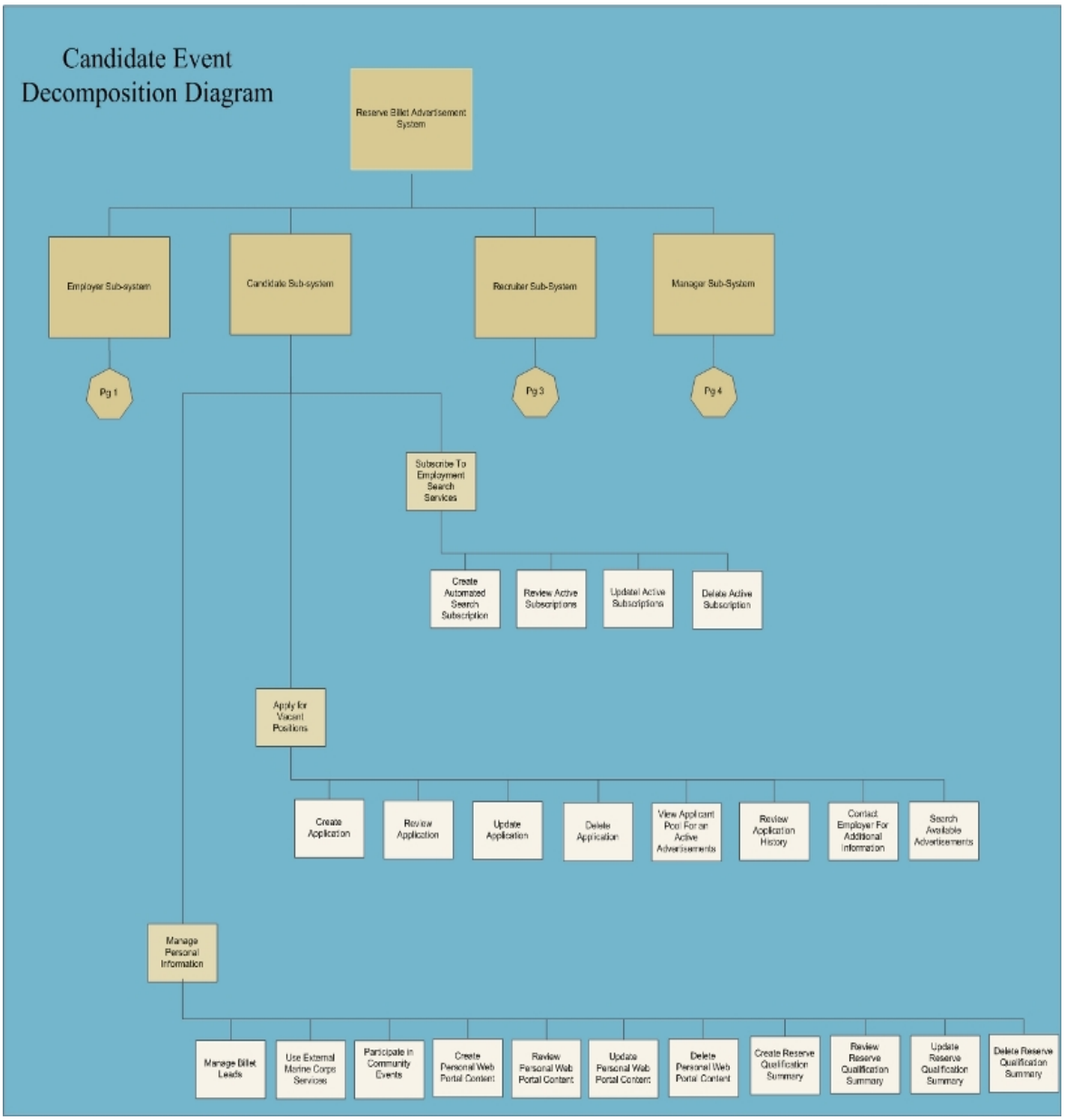

Figure 36. Candidate Event Decomposition Diagram

3. Recruiter Functional Decomposition Diagram

The Recruiter Functional Decomposition Diagram (RFDD) is depicted in Figure 37 and contains three children modules: Utilize Candidate Recruitment Services, Manage Web Portal Settings, and Recruitment Management Tools.

The Utilize Candidate Recruitment Module contains seven use cases which are included in Appendix C. This module provides the recruiter with the ability to create, review, update and delete candidate search and billet search subscription services. These subscriptions are an automated service that provides the user with the matching results of candidate and employment queries that are applied continuously against the RBAS data repository. These services are voluntary and must be signed up for by the recruiter. This module also provides the recruiter with the ability to manually search for billets and candidates as well. Additionally, this module also provides the recruiter with resources necessary to run and manage community events. This includes services such as webinars, blogs and instant messaging.

The Manage Web Portal allows the Recruiter to create, review, update and delete the Recruiter's personal web-portal settings. This allows the recruiter to dynamically change their environment to suit their needs and desires. This customizable interface would allow them to subscribe to Really Simple Syndication (RSS) broadcasts which include blog entries, news headlines, and podcasts in a standardized format. They will also be able to modify their background, install web widgets and view results of RBAS subscription notifications.

The Recruiter Management Tools module provides the Recruiter with the ability to generate ad hoc reports, manning reports, as well as, the ability to manage the leads generated by candidates and employers. This will provide the recruiter with a robust set of data that can be examined for trends and assist the recruiter in meeting his or her assigned mission.

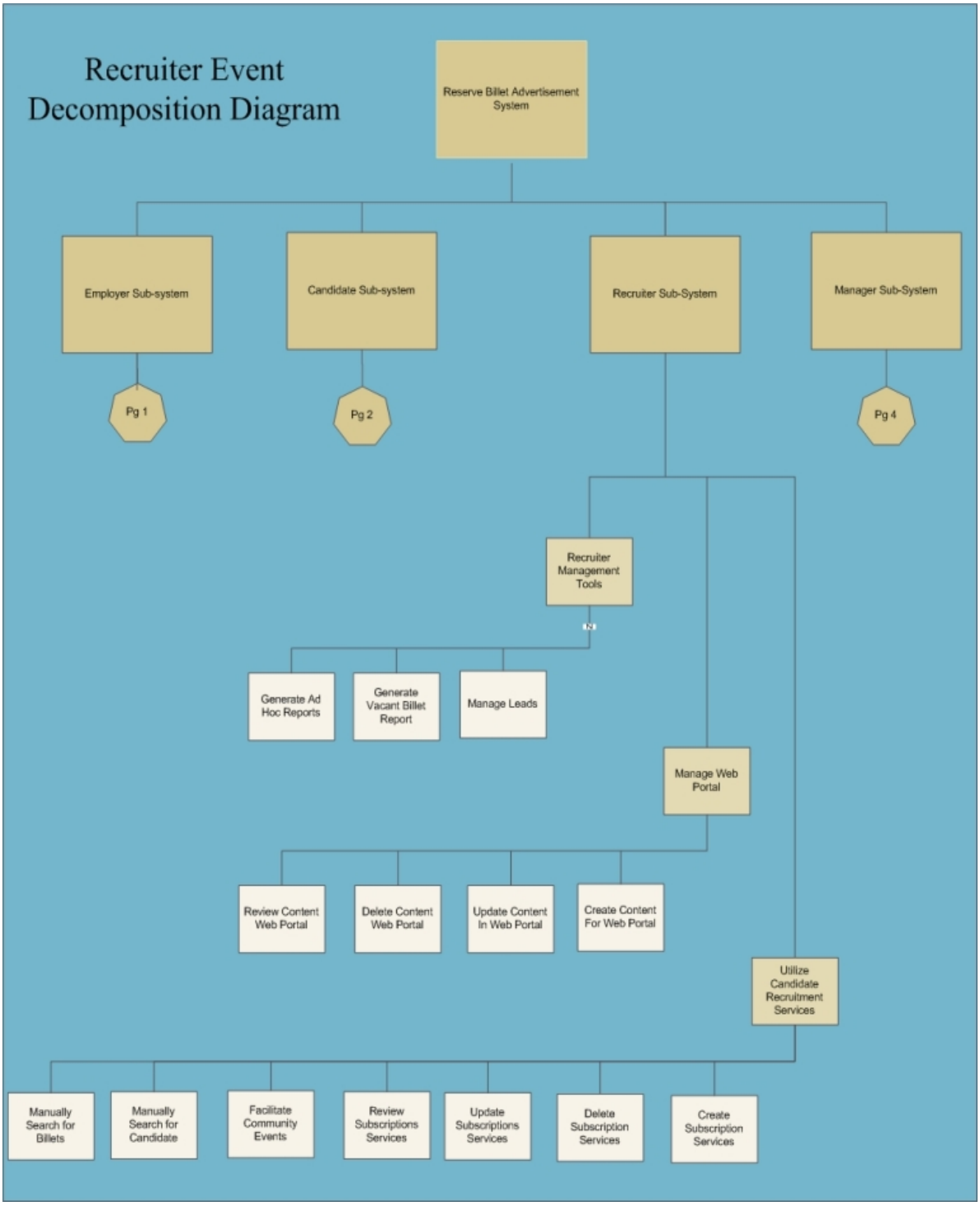

Figure 37. Recruiter Event Decomposition Diagram

4. Management Functional Decomposition Diagram

The Management Functional Decomposition Diagram (MFDD) is depicted in Figure 38 and contains four children modules: Manage Reserve Billet Advertisement System, Manage User Roles, Generate Managerial Reports and Manage Administrative Web Portal.

The Manage Reserve Billet Advertisement System includes six use cases in Appendix D that focus the automated functionality and the interaction with Marine Corps Enterprise legacy systems. Specifically, this module addresses the automated population of the candidate and MOS tables of the database from the MCTFS and TFSMS systems. The module also provides the Manager with the ability to manage trouble calls, verify user's credentials, as well as, perform limited maintenance to the system. The maintenance that the Manager can perform is limited to items that do not affect the normalization of the database.

The Manage User Roles module allows the Manager to create, review, update and delete system user rights and privileges. Through this module the manager will assign users rights and responsibilities. This module will also allow managers to assign the privileges and capabilities of the different access roles within the system.

The Generate Managerial Reports module allows the Manager to create ad hoc reports, user overview reports, system usage reports and a detailed user report. These managerial reports will allow the manager to monitor access and understand the different use patterns of users and groups.

The Manage Administrative Web Portal module provides the Manager with the tools necessary to create, review, update and delete the Manager's personal web-portal settings. This allows the manager to dynamically change their environment to suit their needs and desires. This customizable interface would allow them to subscribe to Really Simple Syndication (RSS) broadcasts which include blog entries, news headlines, and podcasts in a standardized format. They will also be able to modify their background, install web widgets and view results of RBAS subscription notifications.

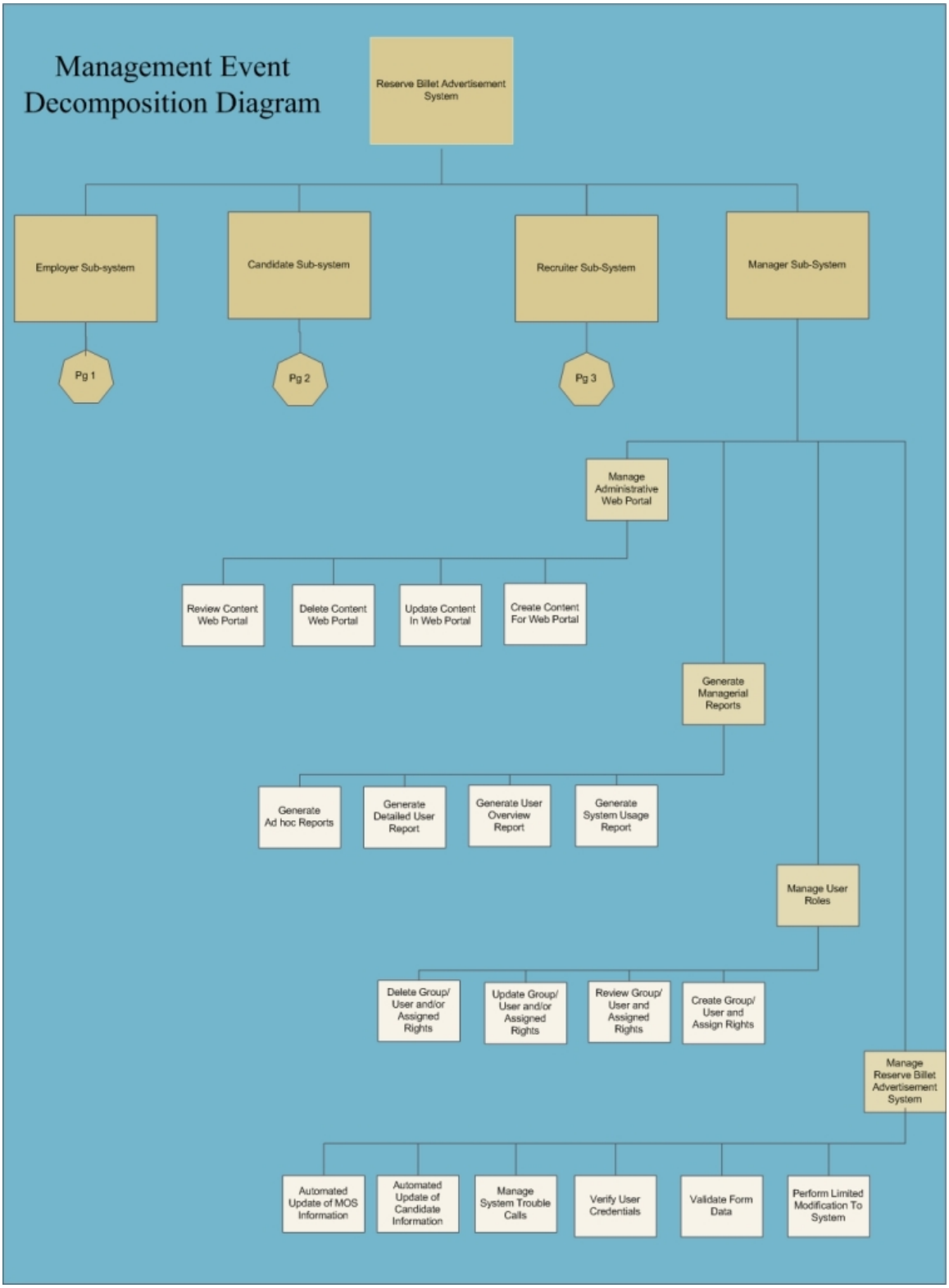

Figure 38. Management Event Decomposition Diagram

D. SYSTEM DIAGRAMS

The final step of our methodology is to stake the building blocks, the event diagrams, and construct the sub-system diagrams. These constructs provide the stakeholders with a complete picture on how all of the different events will work together. In this case, due the size of the system, we chose to construct sub-system vice a complete system. A complete system diagram would have detracted from the usefulness of the model. Each of the models is presented immediately following this introduction.

The first model, depicted in Figure 39, is the Management Sub-System model. It clearly shows that this sub-system is geared towards the management of the users of the system, as well as, the functionality of the system. The second model, depicted in Figure 40, is the Candidate Sub-System. This sub-system provides the candidate with a robust set of tools to actively manage their career. The third model, depicted in Figure 41, is the Employer Sub-System. This sub-system focuses on providing the employers the ability to not only advertise a vacant billet, but it also provides them with a proactive set of resources that they can use to search for candidates. The final model, depicted in Figure 42, is the Recruiter Sub-System model. This sub-system provides the recruiter with dynamic capabilities that they require to actively pursue candidates.

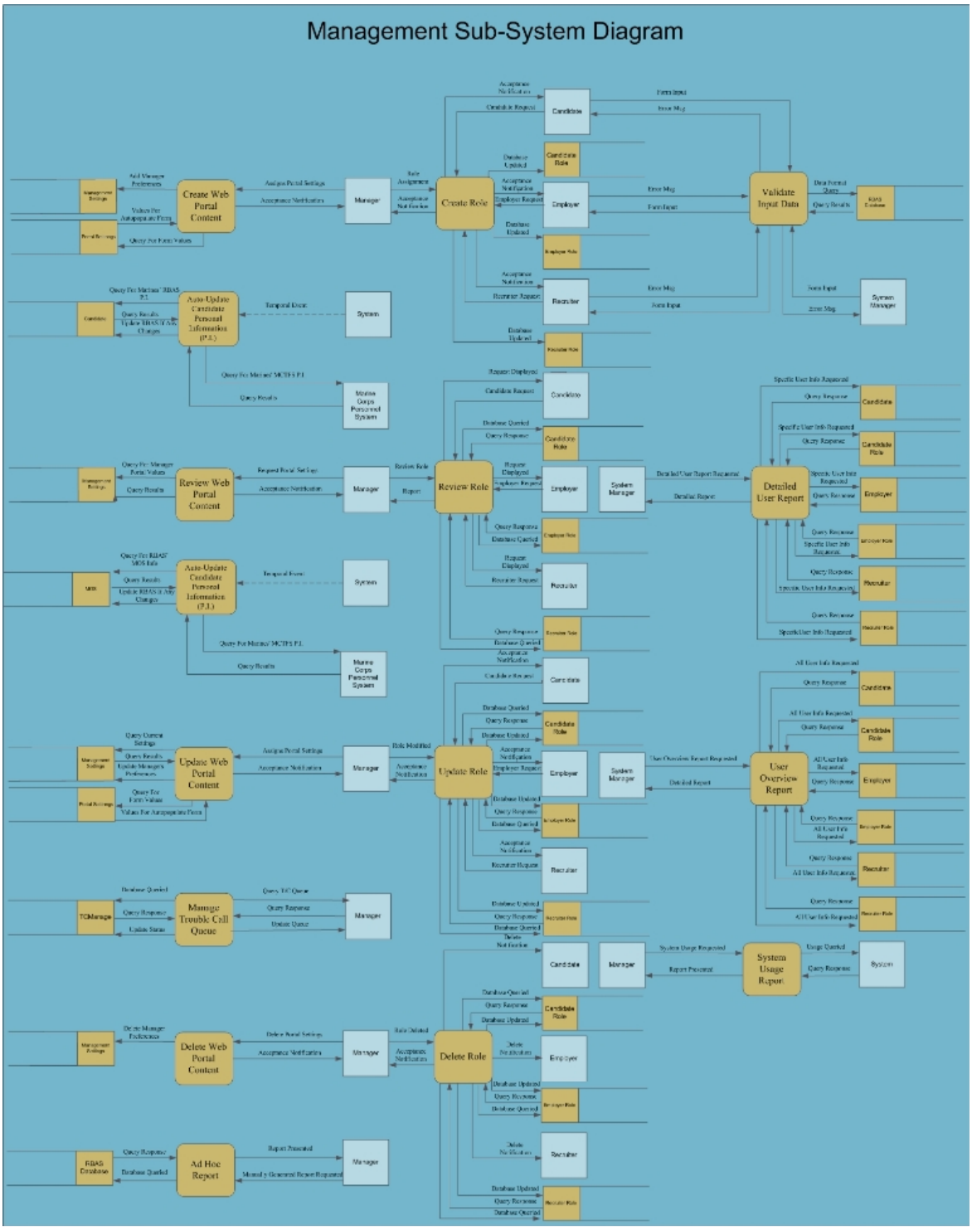

Figure 39. Management Subsystem Diagram

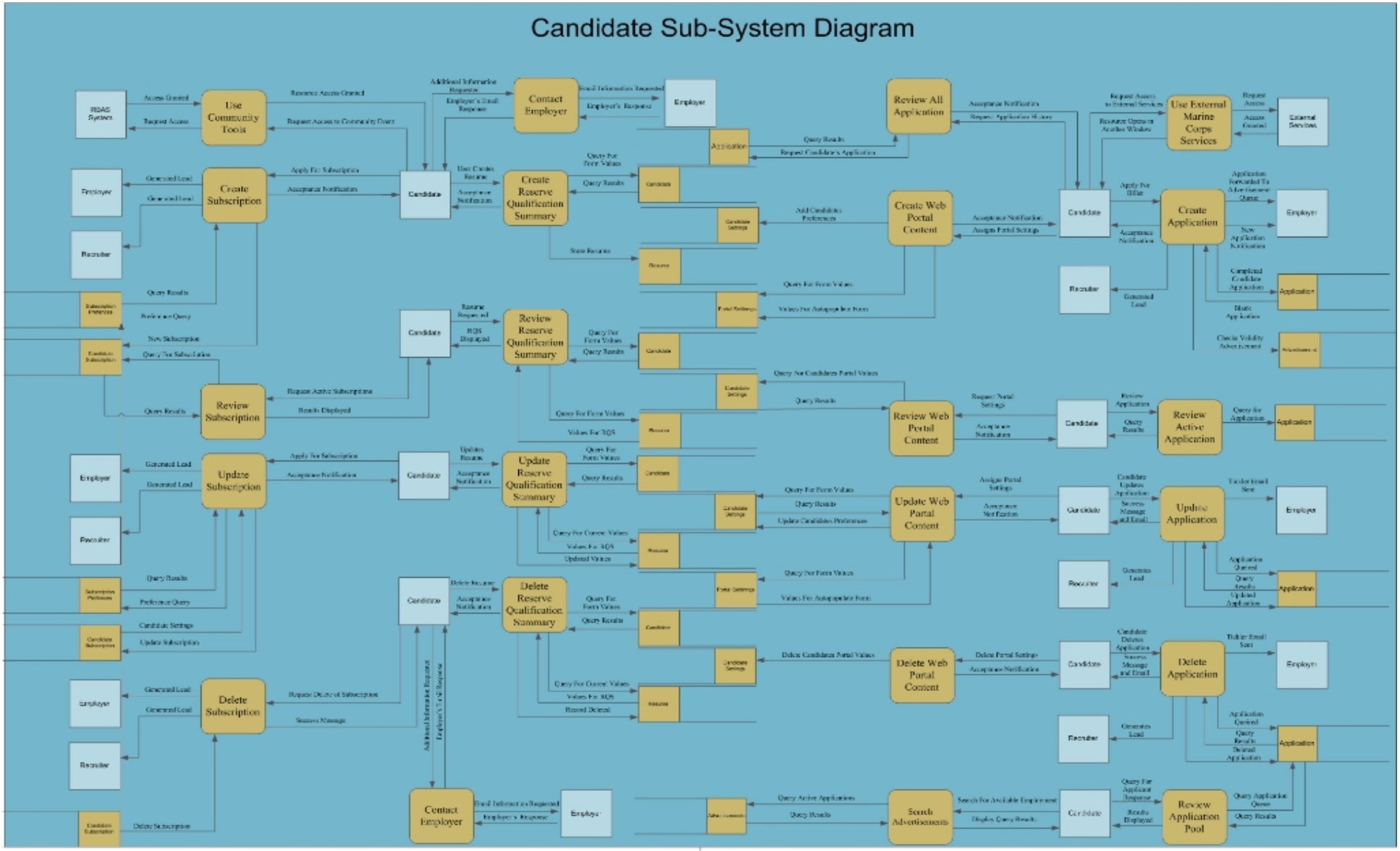

Figure 40. Candidate Sub-System Diagram

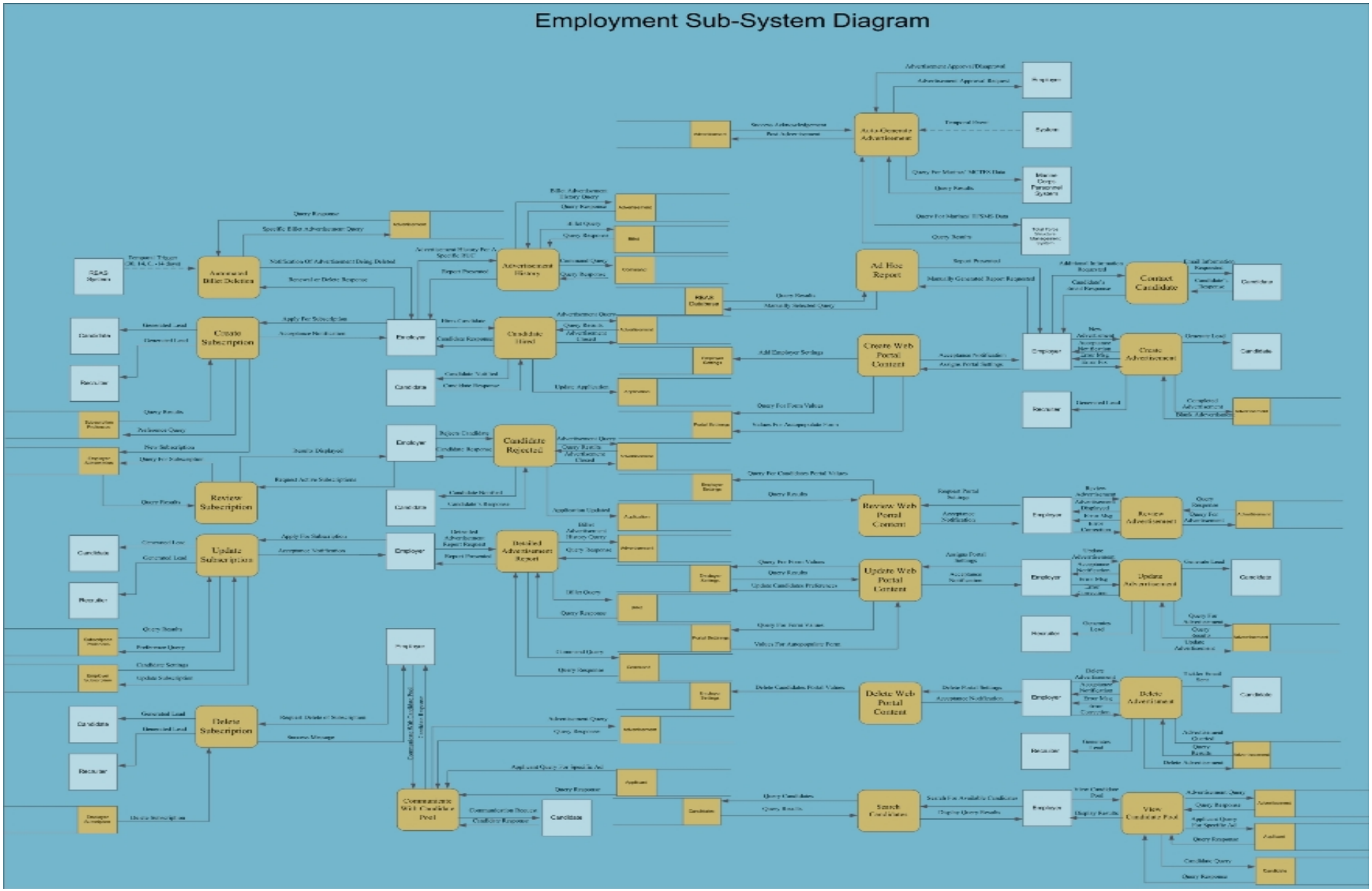

Figure 41. Employment Sub-System Diagram

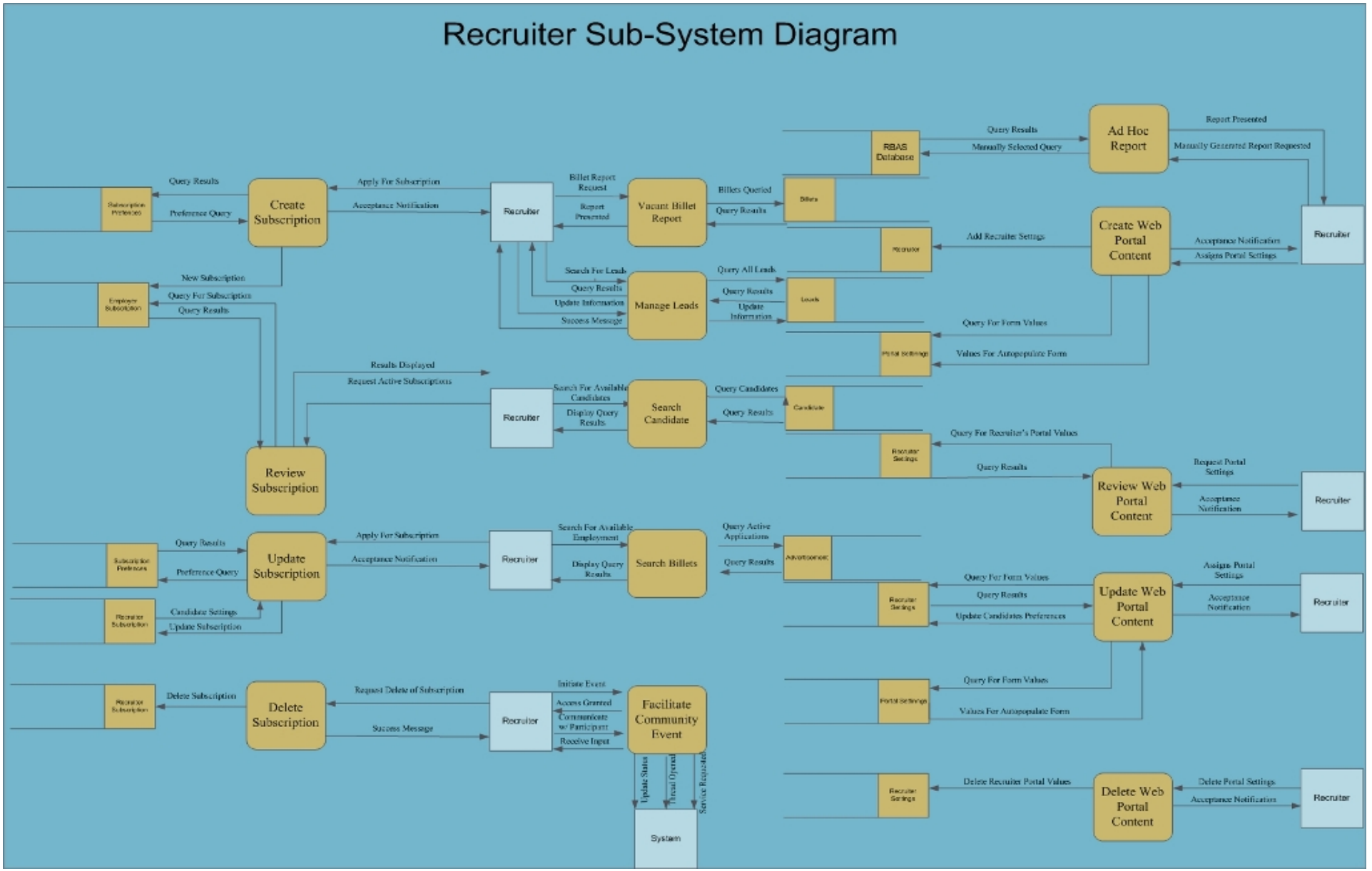

Figure 42. Recruiter Sub-System Diagram

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V. PROPOSED SYSTEM ARCHITECTURE FOR NEXT GENERATION MARINE CORPS BILLET ADVERTISEMENT SYSTEM

The previous chapter identified and defined the requirements for the next Marine Corps Reserve billet advertisement system. This chapter expands upon requirement definition by presenting a generic architecture in which the Marine Corps will be able to build their new system.

To achieve that objective, this chapter is organized in the following manner: The Proposed Architectural Vision and Methodology section provides the readers with the big picture, examines the benefits and costs associated with the architectural design and concludes with the methodology used to for the development of the system's generic architecture. The Proposed Prototype Architecture section presents our generic high-level architecture. The Quality Attribute Tree section presents readers with the metrics that will be used to measure the effectiveness of the proposed architecture. The Proposed System section will build an instance of a specific system using the generic architecture. Next, the Architecture Evaluation Section will use the quality attributes to gauge the effectiveness of the proposed system. Finally, the Risk Management Section will address the most significant risks to the proposed generic architecture.

A. PROPOSED ARCHITECTURAL VISION AND METHODOLOGY

1. Architectural Topology Selection

During the analysis of the results of the literature review and requirements analysis viable architectural patterns, frameworks and components were discovered and incorporated into the future system design. Specifically, it was determined that all of the systems analyzed were built from a variation of a hub and spoke architecture and that they used the Internet as the primary medium to connect the system to its users.

2. The Vision

From these findings, we were able to develop a Software Product Line (SPL) with a specified Product Line Architecture (PLA) that addresses the needs of the future Marine

Corps billet advertisement system. This SPL not only helps the Marine Corps, but it will also extend to any component of the DoD that needs to build a dynamic billet advertisement system. According to Ian Gorton's book *Essential Software Architecture* an SPL is a collection of related products developed by combining core assets with product-specific assets that vary the functionality of the core assets, and a PLA is a reuse-oriented architecture for the core assets of the SPL [26]. This reusable solution would address many other problems within the DoD and not just that of the Marine Corps Reserve. For instance, the SPL would not only solve the Marine Corps quandary on how to build an adequate billet advertisement system, it also addresses similar problems experienced by other components of DoD that need to advertise and fill billets of any type. A great example of this would be the military school houses and training centers which are driven by filling and managing billets within their respective commands. Both of these commands could use the SPL to quickly build a dynamic billet advertisement system at a much lower cost than building it autonomously. The potential for this type of SPL for the DoD is boundless as the majority of all military personnel management and training systems are driven by billets that need to be filled and advertised.

3. Software Product Line Benefits

There are many benefits to leveraging an SPL. First and foremost it would save the DoD significant amounts of money, and second it would reduce the manpower and efforts required to build a new products because of the reuse of software products [4]. Specifically, an SPL will save DoD money in the building process because the design of each new specialized variant requires less time and money to implement the new asset. This would reduce costs to the DoD considerably. An SPL would also save money due to the reduced costs of maintaining the systems [4]. For instance, if a piece of software contained in the SPL was upgraded, the cost of the upgrade is distributed over all users of the SPL. In its current configuration of isolated and stovepipe systems, the DoD has to pay for the same type of upgrade for each system individually rather than distributing the cost across all of the systems. This is a significant expenditure. These points make it blatantly obvious that the DoD is incurring a lot of unnecessary expenses that are mitigated by using an SPL.

Leveraging an SPL would not only save the DoD money, it would also free up manpower and resources by reusing a product. An SPL would reduce manpower requirements because it eliminates numerous duplicated managerial and maintenance efforts that are associated with stovepipe systems. For example, currently each agency within the DoD manages the life cycle of each of its different billet advertisement systems. This correlates to many redundant and duplicated efforts by a large body of managers. An SPL also reduces maintenance requirements because of the common architecture being leveraged. This reduction would be apparent if the DoD converted all of their billet advertisement systems to an SPL built on a common PLA, because the life-cycle management becomes considerably easier and less manpower intensive because the core of each system is now the same.

4. Concerns and Issues

These arguments make it easy to see why utilization of an SPL is beneficial, but there are some concerns for building a SPL. For the remainder of this section we briefly discuss a few of the high level concerns, followed by a description of how the proposed system is tested. As with any SPL an architect is concerned about defining the scope and the market of a system. In this case, each of the systems that we reviewed all had similar scope, and the market of the new SPL is simple - the DoD. We are not trying to trivialize these two problem concerns (scope and market), but because of the unique environment in which this SPL is being built they are much easier to get a handle on than in a commercial environment. Gorton identified three other factors that may act as “barriers” to an organization adopting an SPL, and we consider these briefly. These areas are: change of control issues, the definition of core attributes and the design of the PLA [4].

Change of control issues spawn from the stakeholder’s reluctance or fear to relinquish their power and control over their systems. For example, within DoD every service wants control over the purse strings of their IT systems, because this provides them with the ability to manage and shape the system as they see fit. This thought process is fractured because it leads to the services duplicating their efforts and poorly designed systems. This is evident in DoD as each service has built its own billet advertisement

system, all of these systems are severely flawed and each service pays more than it needs to maintain its system because each one incurs all the costs itself. Stakeholder interviews revealed that each of the services understand that its system is incomplete and each identified the need for a more complete system, but even with this omission none of the services want to relinquish control by building a joint system billet advertisement system. The next problem identified by Gorton is how to determine what the core attributes for the proposed SPL are. In this case a thorough review of requirements documents and stakeholder interviews captured the majority of these attributes. The initial results were presented to the stakeholders for review and approval which they acknowledged. The last problem discussed by Gorton was system design. The design will focus on the core attributes identified through requirements analysis. Stakeholder interviews also identified all of the variations required by the different products. Understanding this "variation" is important when designing a PLA, because the design of the PLA must ensure that these variances are compatible with the core attributes.

5. Strategic Methodology – The Way Forward

To prove the concept that a SPL is sound and that the vision has merit, we are going to apply this vision to our original problem domain of advertising and filling billets for the Marine Corps Reserve. The system built from the proposed generic architecture will be validated and tested against stakeholder defined metrics, quality attributes, to measure the effectiveness of the proposed architecture. This process is depicted in Figure 43.

The generic architecture was designed using a hybrid version of the FAST and ATAM methodologies to perform our analysis. In this chapter we used steps four through eight of the ATAM methodology, a brief description of each follows.

Step four of the ATAM methodology expands upon step three by describing the generic components, the topology and the framework in detail. Step five generates the Quality Attribute Utility Tree. The Quality Attribute Utility Tree identifies and prioritizes the system's most important quality attributes [3]. The output of this tree generates specific quality attributes in the form of scenarios. Step six through eight leverage the

scenarios generated by the utility tree. The scenarios are used to rank and analyze the different quality attributes, which allows the architect to focus on the final architecture and the construction of the product.

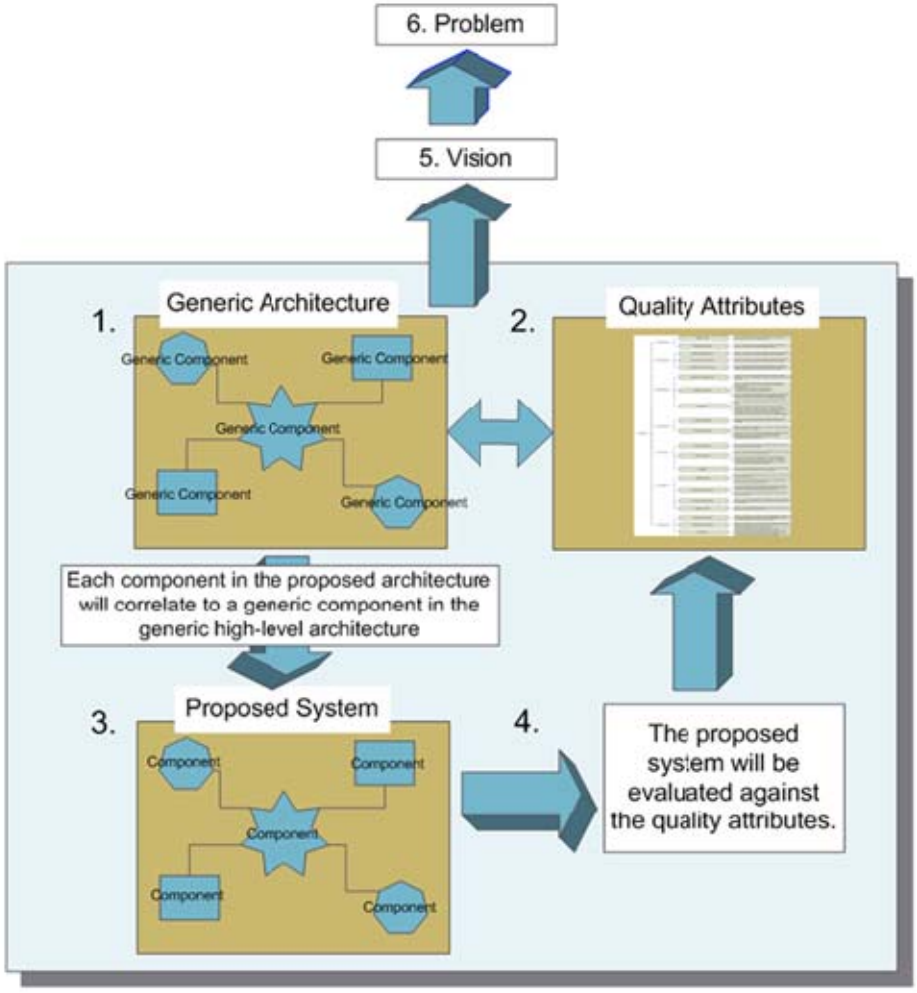


Figure 43. Strategic Overview Methodology

B. PROPOSED PROTOTYPE ARCHITECTURE

1. Generic Product Line Architecture

Our first step was to build a generic PLA. Figure 44 contains a depiction of this high-level generic architecture we built. This architecture captures the essence of the framework required for any billet advertisement system utilized by any DoD component. The natural layout of this high-level architecture correlates to a hub-and-spoke architecture which maximizes the connectivity between the front-end users and the back-

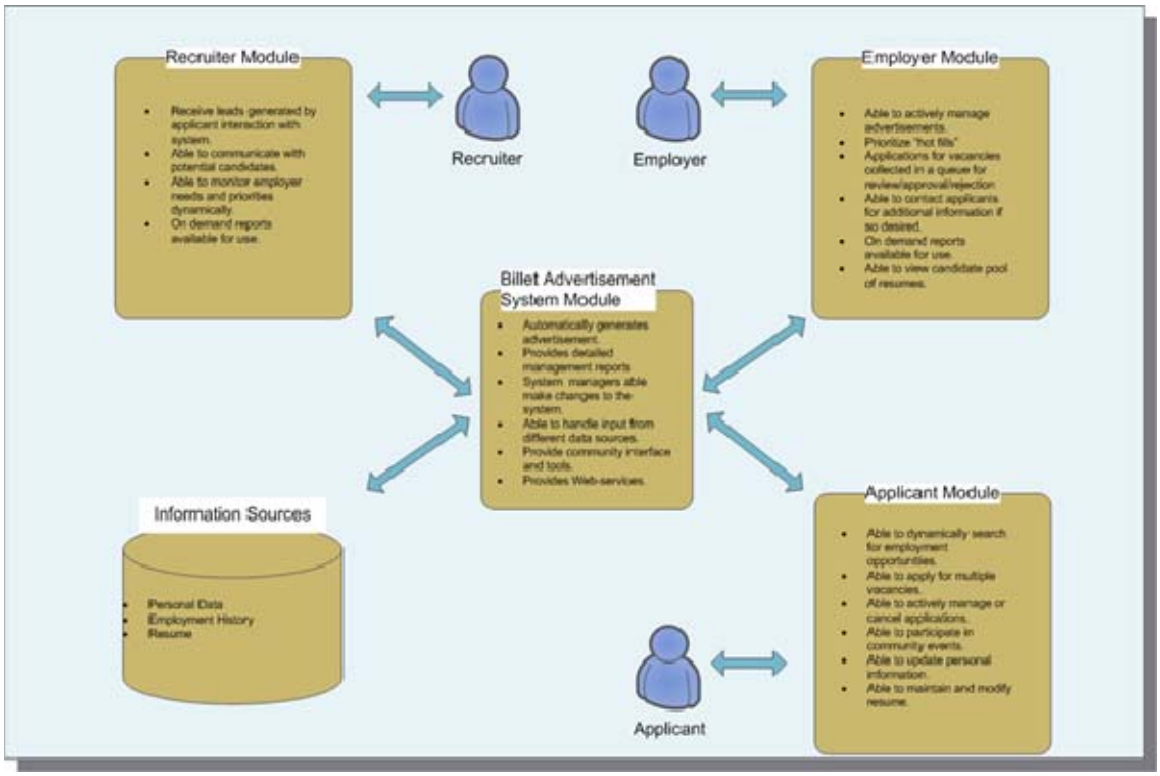


Figure 44. Generic High Level Architecture

end legacy systems by decoupling the systems. Decoupling the systems allows the different systems to continue to utilize their programming language and data structures, because they send their output in its natural form to the centralized hub which contains definition and transformation logic that is used to convert the messages into a common format [3].

2. Billet Advertisement System Module (BASM)

The “hub” of this architecture is the Billet Advertisement System Module (BASM), because this module connects all of the different resources and modules and drives the entire process flow. The BASM will automate the job vacancy advertisement process by drawing and comparing information that is contained in the different personnel and planning information warehouses. BASM will also provide all of the management services, ad hoc management report generation capabilities and web services for the system. This module will also enforce all expiry dates to minimize the amount of dirty data that is stored in the data repositories.

The BASM acts as the “hub” all other modules are dependent upon it, therefore, the reliability and performance of the BASM is paramount to the success of the system. That being said, the BASM’s primary quality attributes are system availability and system throughput. To meet this requirement the BASM must be available to its users greater than 99 percent of the time, and it will handle, at a minimum, 100 billet query messages per second during peak usage periods. The BASM will incorporate robust and redundant mirror sites that will share the transaction load, as well as, pick up the load if one of the systems should fail to ensure that further ensure that the availability quality attribute is met. The requirements discovery also identified that the BASM must be modifiable due to the constant evolution of military organizations. To address this requirement the BASM will provide system administrators with the ability to make changes to the aesthetics of the system, as well as, the ability to change nomenclature. This will allow the site to remain fresh and accurate without compromising the integrity of the system. The BASM will also provide the user with a robust set of career and management tools. These tools will allow the reservist to actively manage their career, and they will provide system managers and employers with ad hoc report capabilities, as well as, administrative tools. Connected to the hub in this star topology are four core modules: the Recruiter Module (RM), the Employment Module (EM), the Candidate Module (CM) and the Data Module (DM).

3. Recruiter Module (RM)

The RM provides job recruiters with a portal in which they can tap the resources of the BASM, receive direction from the various employers using the system, as well as, receive leads generated by the interaction of applicants with the system. The RM will use HTTP/HTTPS and FTP/FTPS via the Internet as its primary means of passing information to and from the BASM. The RM's primary quality attributes are accessibility and security. Due to the mobile nature of a "recruiter" accessibility to the system is paramount. Therefore, the RM will be accessible via several access methods, including, but not limited to, mobile devices such as PDAs, cell phones and laptops. In order to meet this quality attribute the architecture will handle messages transmitted over different channels such as the Internet using a SOAP message protocol. The RM will also provide a large tool bag of web tools such as blogs, email, cellular technologies and instant messaging. These "tools" will maximize the connectivity and accessibility with potential applicants. Because of the number of ways a user connects to the system, security is a significant concern. Firewalls, virus-protection and identity management will be built into the architecture to mitigate much of the risk posed by these mobile users.

4. Employer Module (EM)

The EM provides the different employers with a portal in which they can advertise job vacancies, actively manage the hiring process and search for potential candidates of interest. This portal will also provide a conduit in which they can actively drive the recruiters' efforts by prioritizing the job postings dynamically. The EM's primary quality attributes are usability and authorization. The architecture is designed to make the process as simple as possible for Employers, i.e. more usable. For example, an employer will receive real-time updates to changes that affect the candidate pool, such as when applicants withdraw their applications from the queue. This will allow employers to make more informed decisions during the hiring process. Employers can also contact potential applicants via email or instant messaging in order to request additional information. Authorization must be aggressively addressed, because of the employer's access to personal and professional information of candidates. To ensure this quality

attribute is meet system administrators will grant and manage employer's access to the system. Beyond usability and authorization, because the employers are accessing individuals' personal data, security is critical. Therefore, when private data is accessed, the system will use encrypted SOAP messages over HTTPS or FTPS. If the size of SOAP messages becomes an issue due to system constraints, other more compact binary message formats such as CORBA, GIOP, or ICE will be utilized. Also, transactional integrity must also be guaranteed; to do this, the system will lock the job management resources until it receives a positive response from the BASM that acknowledges successful completion of the transaction.

5. Candidate Module (CM)

The CM provides a portal in which all applicants are able to search and apply for vacant positions advertised by their DoD force. The AM's primary quality attributes are usability and security. Specifically, the system's usability is enhanced by: First, applicants can monitor the state of a current application, view their previous work history or modify or delete any application that has not already been reviewed by the potential employer. Second, applicants are able to leverage dynamic resources in which they can manage their personal and professional information. Third, applicants can join a "community" where they are able to discuss matters which interest them with other members in order to induce networking and a sense of belonging. Again, because the sensitivity of the information being submitted by the applicant, the importance of security is paramount. Therefore, just as in the EM module, measures such as using encrypted SOAP messaging over HTTPS or FTPS are built into the system to ensure the safety of private information being submitted by the user. And also like the EM, transactional integrity must be guaranteed in the CM; to do this, the system will lock the application resources until it receives a positive response from the BASM that acknowledges successful completion of the transaction.

C. QUALITY ATTRIBUTE UTILITY TREE

Following the specification of the high-level architecture, a detailed stakeholder analysis was conducted to determine the "wish lists" for the system. This analysis

included stakeholder interviews, literature review, as well as, a thorough analysis of the current iteration of RDOL. These efforts led to the definition of the required quality attributes of the system, which were inserted into “a utility tree” or “a quality attribute tree,” (Figures 45 through 47) to make it easy to understand and digest. This step is particularly important, because quality attribute utility trees focus efforts on the aspects of architecture that are critical to the success of the system [26]. The developed tree, while not all inclusive, does just that as it includes the attributes that were deemed by the stakeholders of the system as most important. They include the following critical attributes: timeliness, automation, modifiability, integration, security, usability and availability.

The following is a brief description of the high-level quality attributes that were defined by the stakeholders. The timeliness attribute defines how the age of an advertisement affects the viability of the data. The automation attribute addresses how data and when data is transferred to the advertisement system, what data sources are utilized and how the information is coalesced and processed. The modifiability attribute defines how the system is configured, how it will respond to growth and how it will scale to increased use.

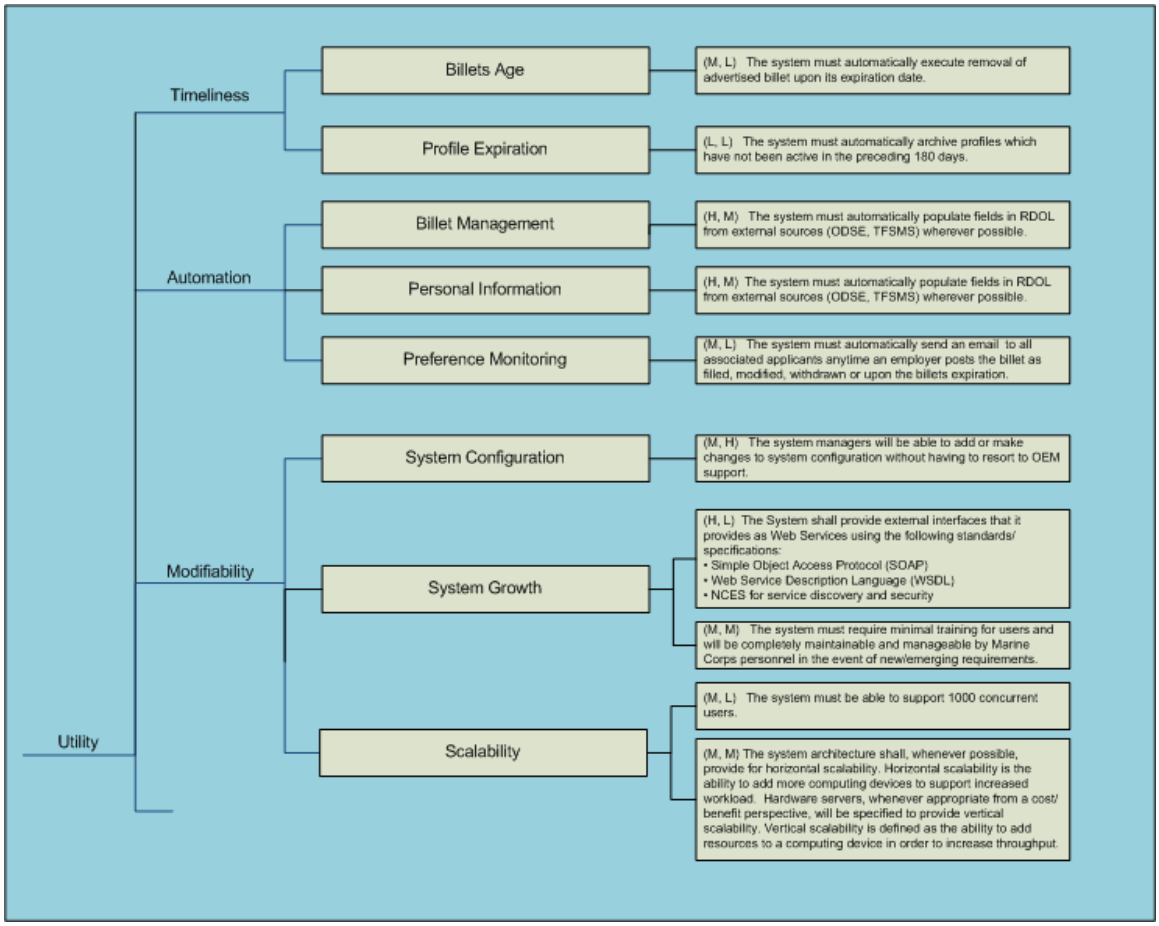


Figure 45. Quality Attribute Tree (Top Section)

The integration attribute defines the interoperability of the system with other systems and how it will communicate with them. The security attributes identifies how the system will authenticate and authorize resources to its users. It also defines the requirements on how the system will guarantee the integrity of the data being transmitted between systems.

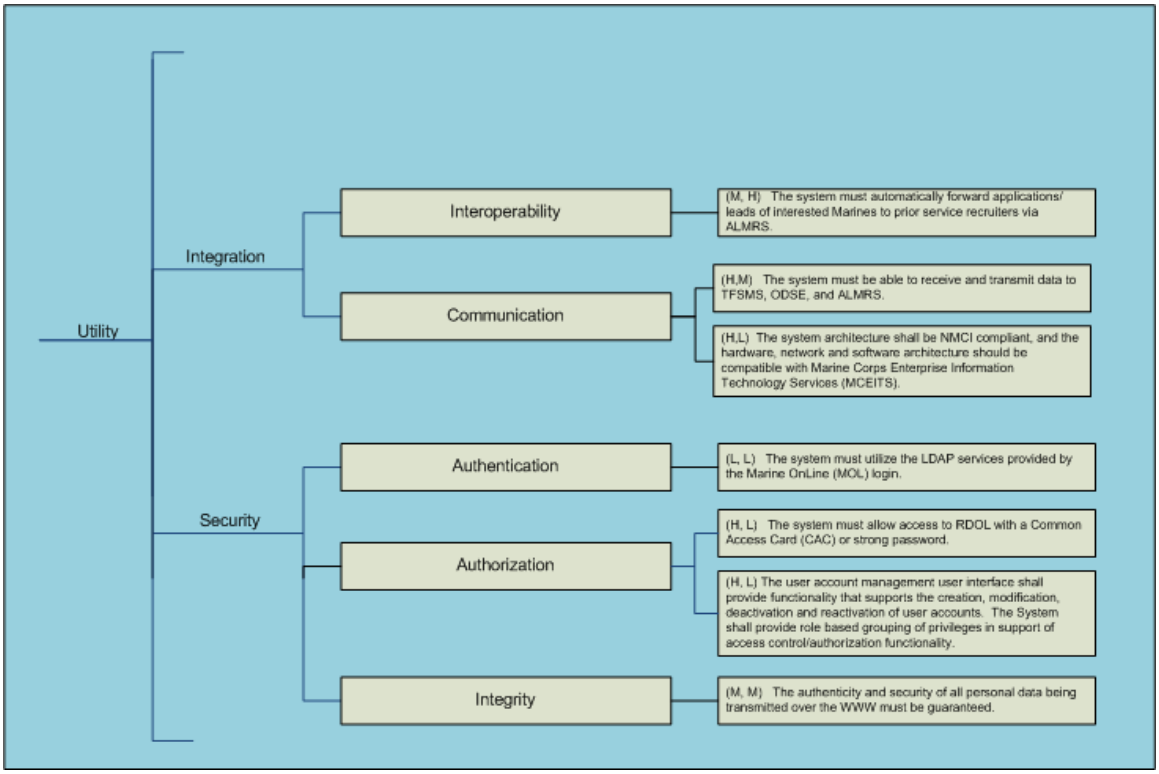


Figure 46. Quality Attribute Tree (Middle Section)

The usability attribute defines what tools are available to reservists and managers, and it defines how data is structured as the user inputs information into forms. Finally, the availability attribute will define aspirations for uptime and accessibility, which will ultimately affect the hardware and redundancy qualities of the system.

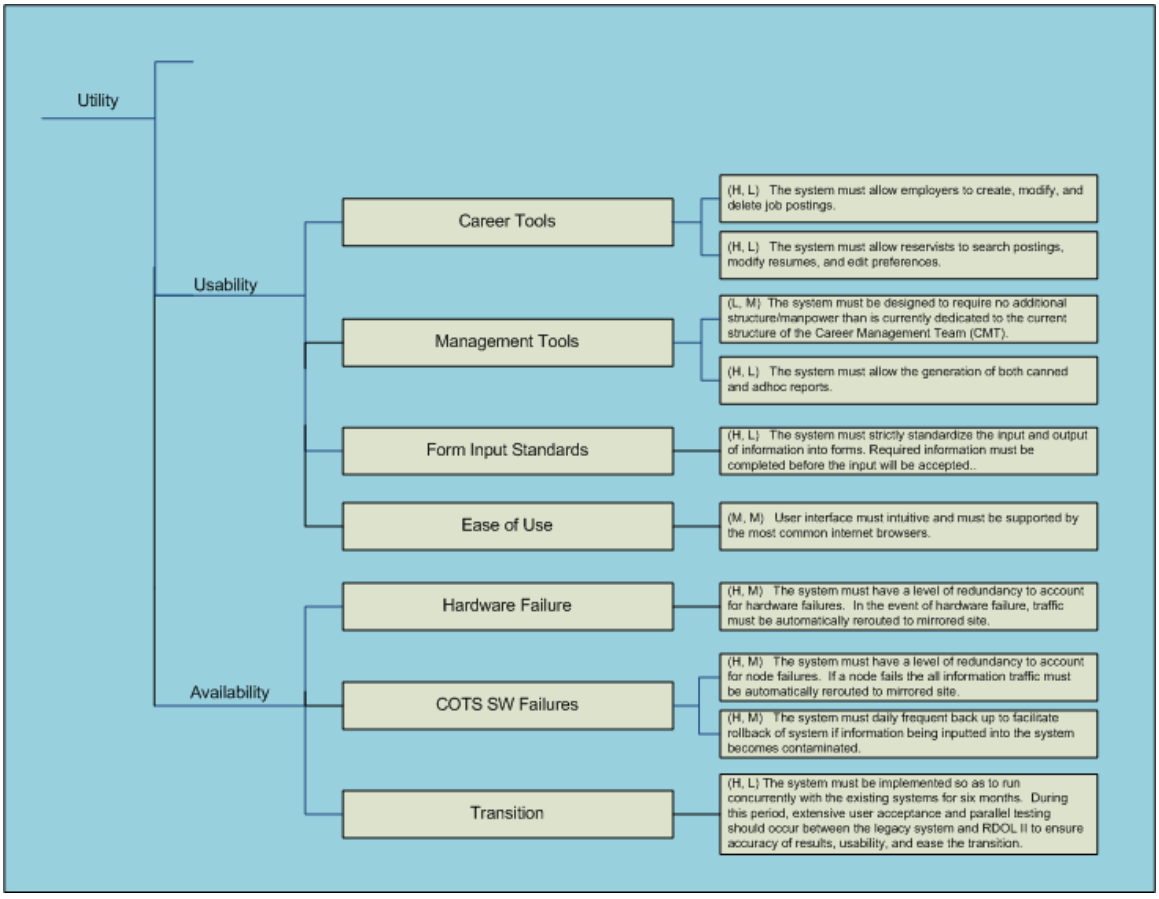


Figure 47. Quality Attribute Tree (Bottom Section)

D. PROPOSED SYSTEM

After analyzing the required quality attributes and reviewing the generic high-level architecture, the next step in our process was to build a specialized instance of this generic architecture. Every component within this specific system correlates directly to a generic component within the PLA. It was determined that leveraging the robustness of commercial components by plugging them into our generic architecture provided the best solution for the Marine Corps. This decision was made because the billet advertisement systems currently deployed by the DoD failed to meet the litmus test due to poor design, lack of documentation and inadequate management. For example, the JOAPPLY system deployed by the Naval Reserve was built iteratively from a small Excel worksheet. As the system grew, system administrators failed to document the changes that were made to the

system which led to significant compatibility issues, as well as, major scaling issues. This "no plan" type build has led not only to technical issues, but also led to significant maintenance costs. This type of problem was indicative of every DoD system that we analyzed.

Therefore, it was concluded that building a hybrid system by integrating Monster.com's commercial architecture within the generic architecture provided the most complete and viable solution. This approach prevents the DoD from "reinventing the wheel," because it uses existing and proven commercial technologies. It also minimizes life-cycle maintenance costs; because the primary billet search system is already mature and has been optimized. In addition, it affords the DoD with the best opportunity to get a system up and running the quickest. Figure 48 presents a high-level view of the hybrid architecture that we propose that the Marine Corps adopt and deploy. This system was built from the framework of the generic architecture proposed earlier in this paper; that being said, we will emphasize this point by breaking each component down and tying it back to the corresponding component in the generic architecture. The "hub" of the generic architecture is the BASM. With this proposed instantiation the functionality and responsibilities of the BASM is distributed over five modules: the Application Module, the Monster Business Gateway, Marine Corps Recruitment System (MCRS), Marine Corps Employer Agency System (MCEAS) and the Marine Corps Reserve Management System. We breakdown the system based on these three components.

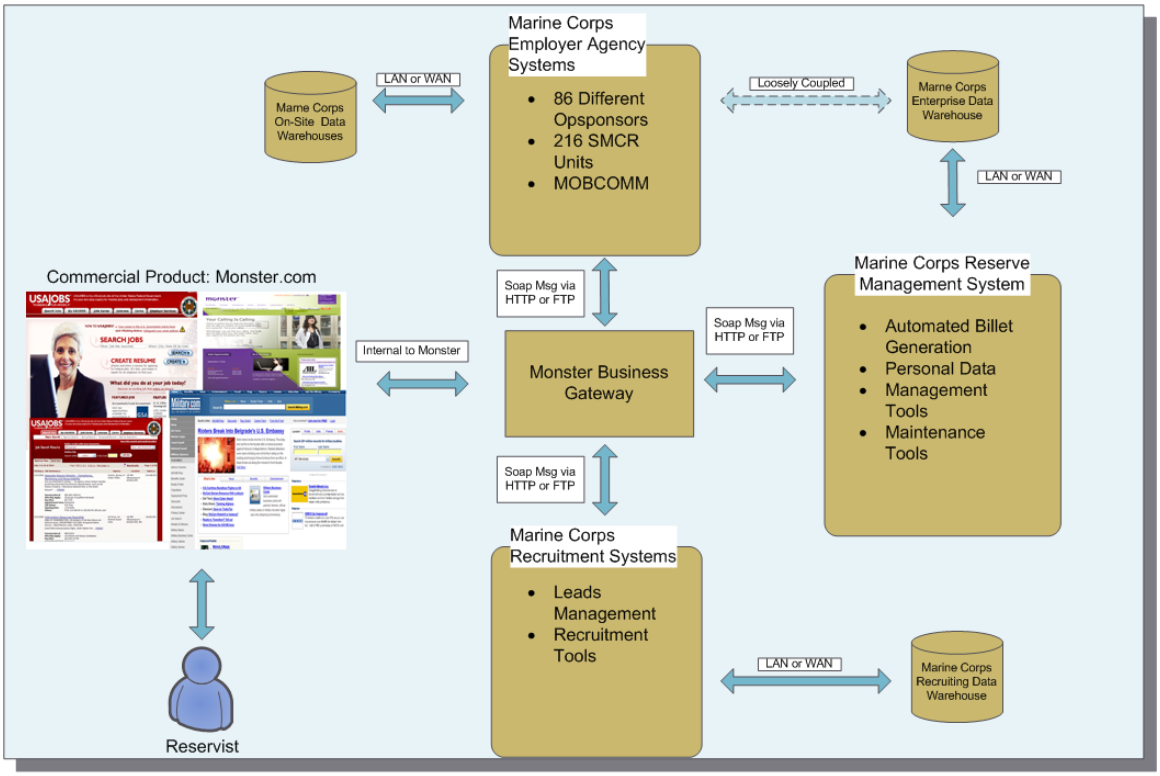


Figure 48. High-Level View of Proposed System

1. Application Module

The Application Module captures all the quality attributes defined for the AM module in the generic architecture, but it also inherits the community socialization tools that were originally assigned to the BASM. In fact, the Applicant Module is where the primary front-end users interact with the system, and it is completely contained within the domain of the Monster.com portion of the system. The reason for this is simple: Monster knows what it is doing on the front-end. Monster, in its current configuration, has 17 unique job search networks and 40 international sites which encompass both commercial and academic institution portals [27]. This congregation of resources has created an impressive data warehouse of potential candidates, in fact, as of June 2007, Monster and its subsidiaries housed over 80 million unique job seeker resumes and 40,000 more are

added each day [28]. This makes it easy to surmise that they are able to handle the increased volume of consumers that Marine Corps Reservists will introduce to their system.

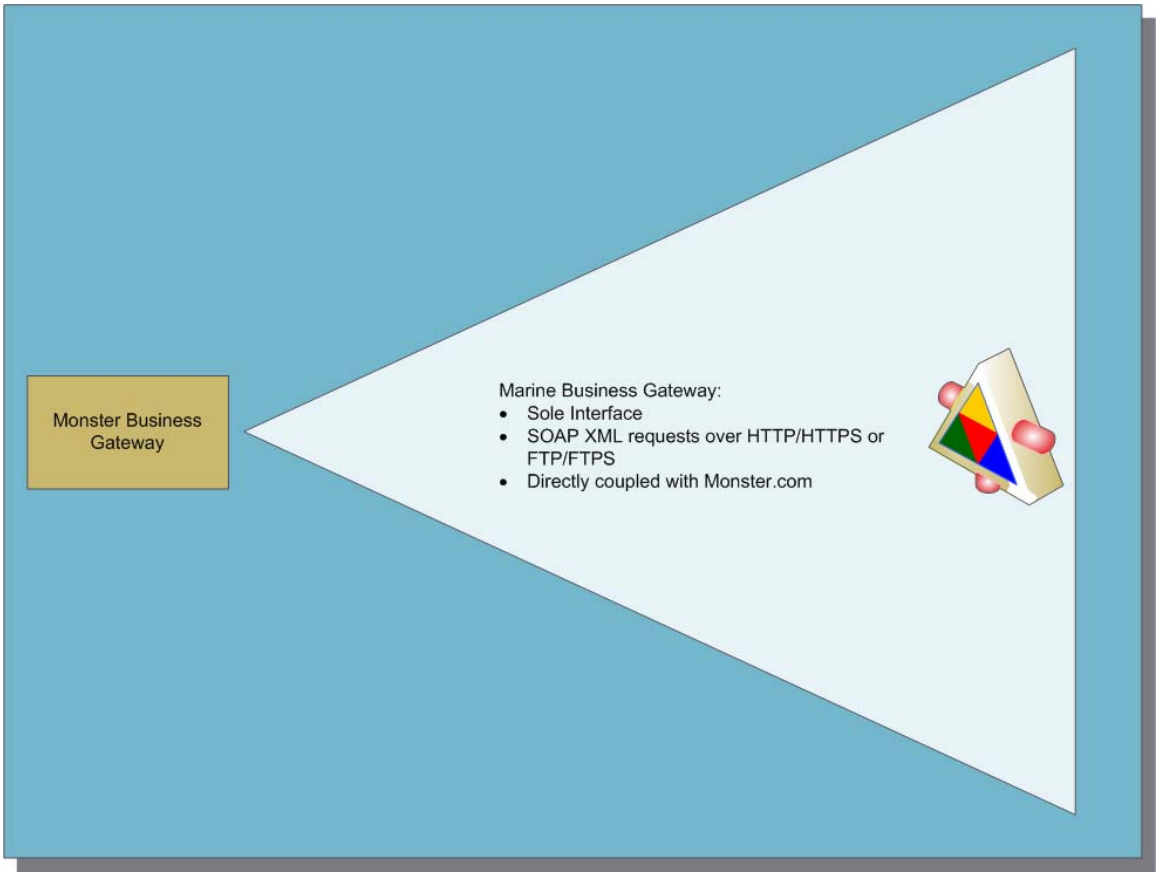


Figure 49. Monster Business Gateway Component View

2. Monster Business Gateway (BGW)

The Monster Business Gateway (BGW), depicted in Figure 49, is the next module analyzed. The BGW will act as the sole interface and the hub between Monster.com resources and the Marine Corps systems. Therefore, this component takes much of the messaging responsibilities that were delineated for the BASM presented in the generic high-level architecture. Specifically, it will pass all information between the different spokes of the hub and spoke architecture. Messages to and from the BGW will support SOAP XML requests over HTTP/HTTPS or FTP/FTPS. The SOAP header will contain a

time stamp, a unique message ID and an authentication ticket [20]. The combination of HTTPS/FTPS protocols and the SOAP header contents address the security quality attribute requirements. Information transferred internally within Monster is distributed by application servers which will disseminate the data to the appropriate component within Monster. The BGW has multiple mirror sites and Monster guarantees over 99 percent availability for this resource. The BGW can also handle over 1000 transactions per second [20]. Both of these results exceed the accessibility and throughput quality attribute requirements that were defined in the BASM portion of the generic architecture. All transaction requests submitted or received via the BGW are positively acknowledged near real-time depending on the size of the file being transferred.

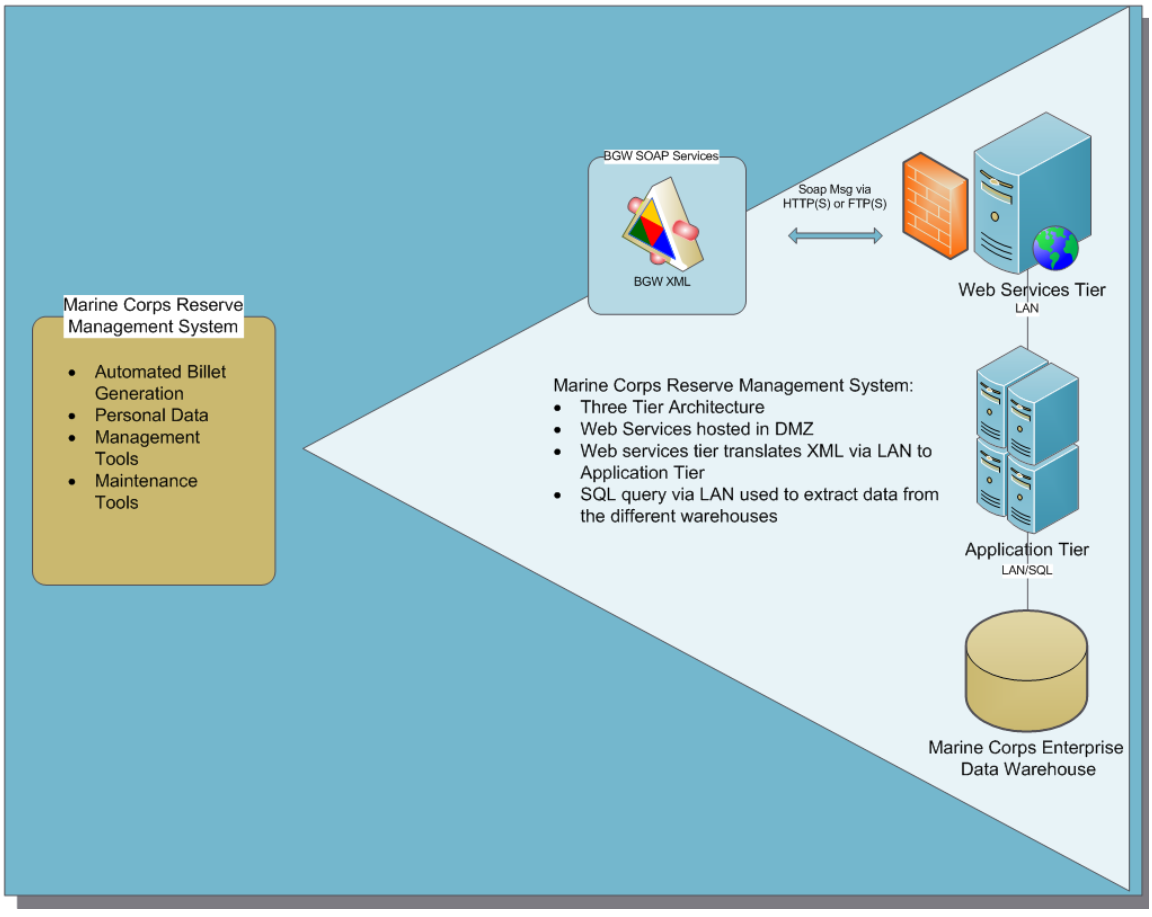


Figure 50. Marine Corps Reserve Management System Component View

3. Marine Corps Reserve Management System (MCRMS)

Figure 50 depicts the Marine Corps Reserve Management System (MCRMS), and it contains the last of the distributed attributes of the BASM from the generic high-level architecture. Specifically, this module will provide the automation and management tools that were originally the responsibility of the BASM. This component is built using a three tier architecture that is housed at Headquarters Marine Corps with a mirrored sight maintained at MARFORRES in New Orleans. The top layer, the Web Services Tier, is located within the Demilitarized Zone (DMZ) of the Marine Corps domain. Its purpose is to unwrap or wrap data in an appropriate SOAP wrapper and transmit it to the Application tier or the BGW for processing. The bottom layer, the Marine Corps Enterprise Data Warehouse Tier, is currently comprised of numerous legacy systems that operate autonomously. This layer is conceptually made of up of the Marine Corps Total Force System (MCTFS) and Total Force Manpower Models Reengineering System (TFMRS). MCTFS, the Marine Corps personnel system, houses all of the personal data and assignment history of current and past Marine Corps personnel. TFMRS, the Marine Corps manpower modeling system, houses all of the Marine Corps present and future manning models. The top and bottom tiers are connected to the application layer of the MCRMS via the Marine Corps secure LAN.

The Application Tier, the middle component, will contain a Billet Calculation module, a Resume Information module and a Reservist Management module. The Billet Calculation model will query current Table of Organization data for a specific Reporting Unit Code (RUC) from TFMRS, and it will query for current Marines on hand for the same RUC. The application will then determine which billets are vacant for that RUC by looking for disparities between the two sets of data. This functionality meets the requirement defined by the timeliness quality attribute defined in the Quality Attribute Tree. The Resume Information Module will query data from MCTFS to auto-populate resume fields. This attribute meets the requirement defined by Billet Management quality attribute defined in the Quality Attribute Tree. The Reservist Management Module will allow authorized users to make modifications to the site, create on demand reports and

assign user roles. This application is provided by Monster. The results of any queries are transmitted to the Monster site via the Web Services Tier which will send it to the BGW.

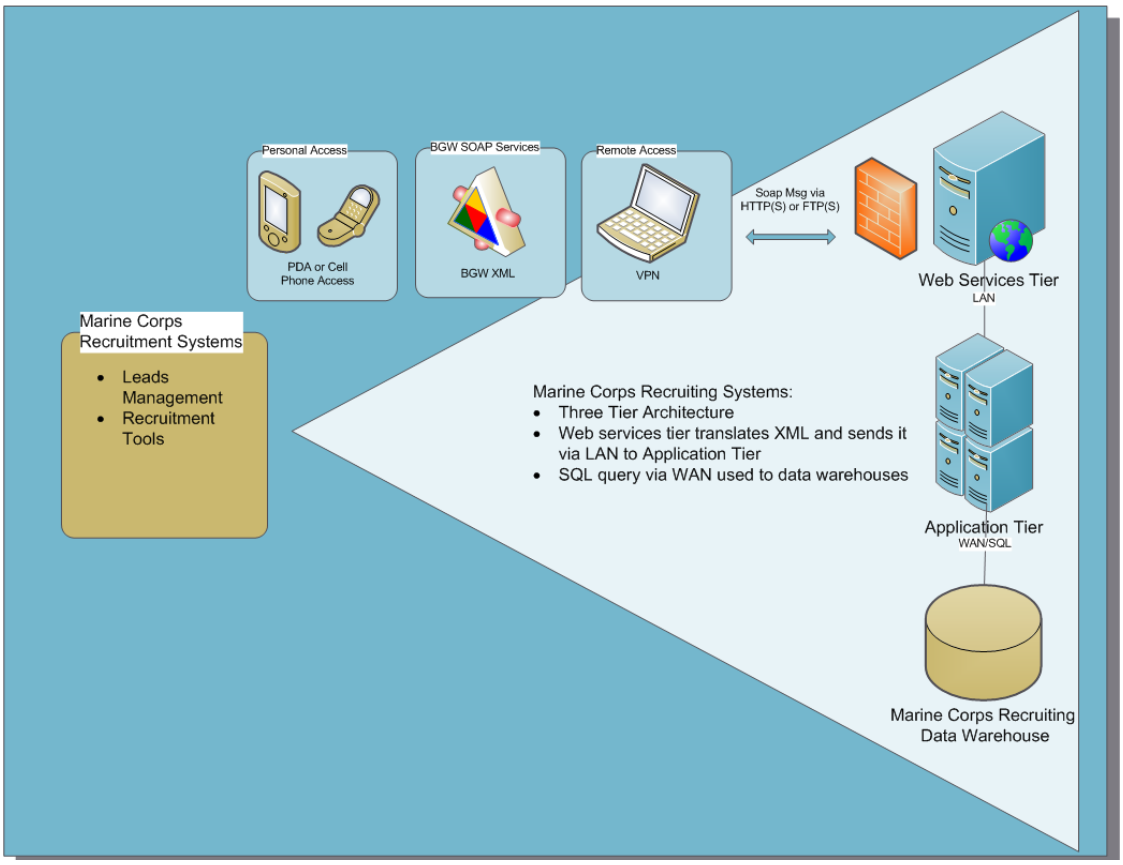


Figure 51. Marine Corps Recruitment Systems Component View

4. Marine Corps Recruitment System (MCRS)

Figure 51 depicts the Marine Corps Recruitment System (MCRS) which provides the Recruiters with a robust set of tools in which they can leverage leads generated by reservists that visit the Monster website. It correlates directly to the Recruiter Module of the generic high-level architecture. The MCRS is comprised of a three tier architecture that is housed at Headquarters Marine Corps with a mirror site at the West Coast Regional Recruiting Office. The top layer, the Web Services Tier, resides in the DMZ on

the Marines domain the same as the MCRMS system. The recruiting data warehouse is comprised of a proprietary data warehouse that is maintained by Marine Corps Recruiting Command.

Due to the breadth and dispersed nature of recruiters, this node is accessible remotely via VPN or remote access point via any peripheral device that has access to the Internet and has encryption capabilities. That application tier will house Monster software that will allow them to remotely logon to the site, use management tools and leverage recruitment tools. This Monster application will also facilitate the broadcasting of leads to recruiters near real-time. Specifically, when a reservist expresses interest in a billet, a lead is generated by Monster and transmitted to the Recruiters automatically. “Interest” is defined as anyone who submits a resume, or anyone who submits an application or anyone who request additional information. This is relayed via the gateway to the web server and finally to the application server which then disseminates the information to the various devices held by the recruiter closest to the prospect. Because of this, the module meets the accessibility quality attribute that was defined by the generic architecture and the quality attribute tree. Moreover, this module meets the security quality attribute because all information transmitted between the remote user and the MCRS is sent via HTTPS and is encrypted. Users also have the ability to use VPN services to further secure their communication.

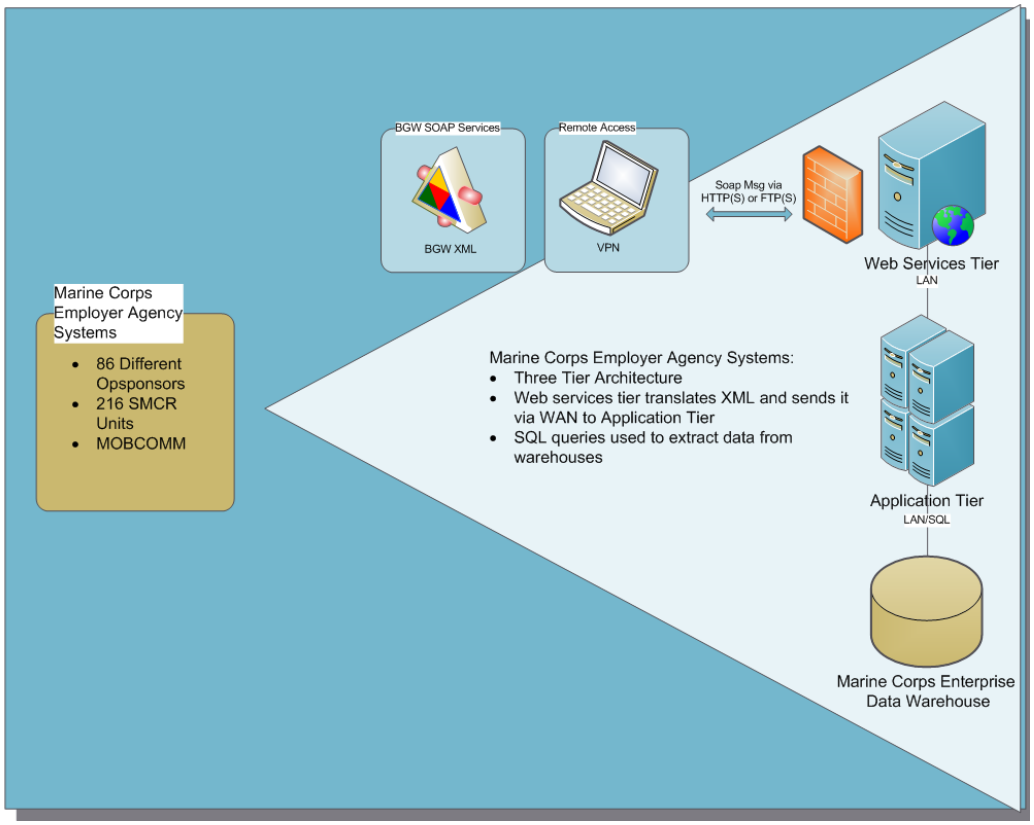


Figure 52. Marine Corps Employer Agency Systems Component View

5. Marine Corps Employer Agency System (MCEAS)

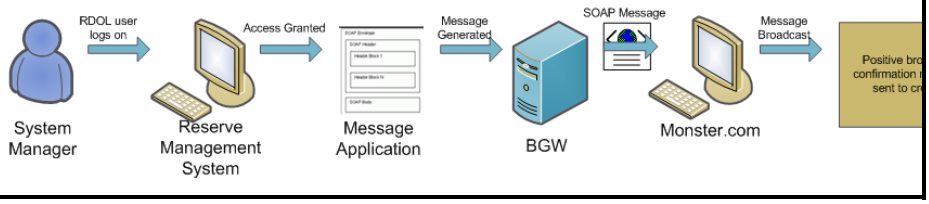
Figure 52 depicts the Marine Corps Employer Agency System (MCEAS). This node provides employers with the tools and resources necessary to advertise vacant billets, as well as, search for potential candidates. It correlates directly with Employer Module from the generic high-level architecture, and it meets all the quality attributes defined by the Employer Module. This node of the system is also built upon a three-tier architecture. The top layer resides in the DMZ the same as the previous two systems. The bottom tier is comprised of numerous data warehouses that currently reside in the different stove pipe systems that exist within the Marine Corps. No queries are applied against these data sources, but the connectivity is established for future application possibilities. Monster will provide the application that allows employers access to the

new system. This application will allow them to build and manage advertisements, track and monitor response and review resumes. It will tie back to the system via the BGW.

E. ARCHITECTURE EVALUATION

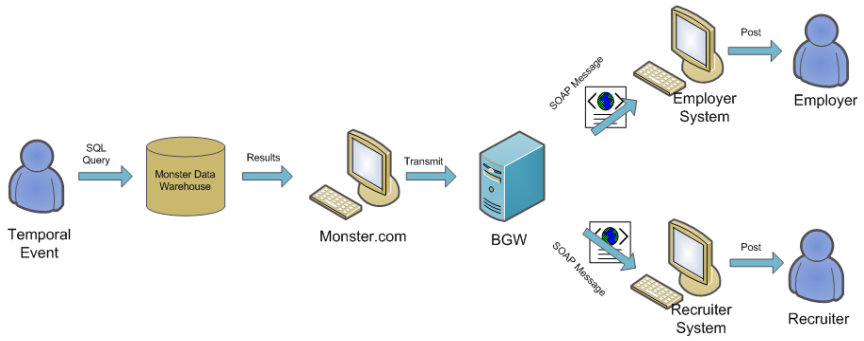
Using the Quality Attributes (QA) identified earlier, we evaluate the proposed system that was built using the generic architecture. QAs represent the metric, as defined by the stakeholders that are used to measure the viability of the proposed architecture. QAs are inserted into a hierarchical tree, and each branch of the tree represents a QA. The leaves of each QA branch represent scenarios that are used to qualify the desired level, to operationalize the meaning of the quality in practical contexts, and to evaluate whether the architecture meets the needs defined. However, we will only address four scenarios, tied to particular aspects of the architecture due to broad scope of the project and limited manpower.

The first scenario ensures that a Manager can make changes to the system as nomenclature and requirements change within the DoD. The military undergoes continuous change, therefore its systems must adapt with them or they will become antiquated well before their project useful life. The second scenario ensures that the jobs posted within the site are viable and accurate. In the past, many of DoD systems did not have any business rules in place to ensure that the data being displayed was within periodicity or that the information being displayed was correct. The third scenario tests the connectivity between the new system and the legacy systems within the Marine Corps. This is significant, because all of the data repositories that our drawn from all are built from older technologies. The fourth scenario ensures that reservists can actually search for prospective employment. If this function doesn’t work, the system doesn’t work.

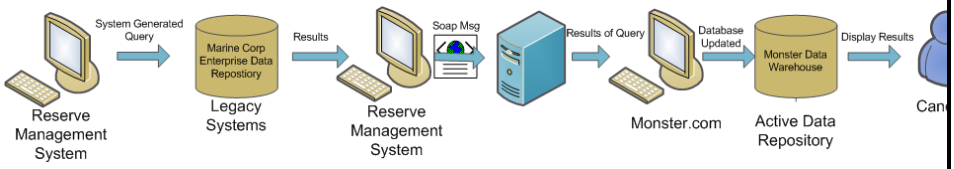
Scenario #:	1
Scenario:	Assigned management personnel (military or civilian) with level one computer skills, inputs new broadcast message, or modifies webpage aesthetics (front-end).
Attribute(s):	Modifiability
Environment:	Normal Operating Conditions.
Stimulus:	System manager desires to update the broadcast message on the site's homepage to disseminate information to all current users without the use of spam.
Response:	A broadcast message is sent to all applicable recipients.
Architectural decisions:	The key architectural decision made was the manner in which broadcasts are transmitted to the desired audience. In this instance, messages are transmitted via the BGW and posted in an ALERT section of the user's homepage for review.
Reasoning:	Stakeholders expressed the desire for a Manager to log onto the system and broadcast informational messages without the help an IT professional. They also expressed a desire to limit the amount of information that was transmitted via email. Therefore ALERT messaging using SOAP was selected as the means to broadcast messages to users of the system.
Diagram: **(verbal description)**	In this scenario, the RDOL manager begins by successfully logging into RDOL with the appropriate privileges to make changes. He or she would then enter the reserve management module and creates a message. Once the message is complete and the user hits "post message." it is wrapped in a SOAP wrapper, passed to the web services layer, and then transmitted via HTTPS to Monster via the Business Gateway. The BGW submits it to the appropriate application within the monster domain. Upon successful submission, a positive response is presented to the user via email/popup.
Diagram: **(pictorial presentation)**	

Analysis:	As this system is largely unchanged since its inception in 2001, many stakeholders wanted minor adjustments to the website front end (CSS modifications) or simply the manner in which the page was laid out (tabs, menu style). The current iteration of RDOL requires thousands of dollars and numerous man hours to make even the slightest change to the front end. This methodology addressed a very important concern identified by several stakeholders; therefore it meets the system configuration portion of the modifiability quality attribute identified in the generic architecture.

Scenario #:	2
Scenario:	The system must automatically execute removal of advertised billet upon its expiration date.
Attribute(s):	Timeliness
Environment:	Normal operating conditions.
Stimulus:	Time triggered event. Daily the system will perform a query that determines which billets are about to expire, which have expired and which are greater than two weeks past their expiry date.
Response:	The system will respond in the following manner: 1. It will notify recruiters and employers of all billets that are within two weeks of its expiration date. 2. A follow-up notice is transmitted to both the recruiters and employers one week from the expiration date. 3. At the expiration date the vacancy is locked and no one can apply for it, but it will remain posted on the site for an additional two weeks in order to serve as a recruiting tool. Employers are notified of billets that remain unfilled. 4. Two weeks after the expiration date the vacancy are removed from the active site and archived.
Architectural decisions:	A daily temporal event triggers a SQL query of active data repository, and results are transmitted via notification process.
Reasoning:	Daily querying against the active data repository ensures that only viable, active billets are displayed for applicants conducting searches. It also minimizes the amount of false applications. It keeps the data clean. Daily querying also provides recruiters and employers with notifications to ensure that they understand the time constraints associated with vacant billets. This provides employers an opportunity to modify the billet if so desired, and it also provides recruiters with information that will allow them to correctly prioritize their efforts.

Diagram: **(verbal description)**	Daily, at a time determined by the system manager, the system will query the active data repository. The results of the query are transmitted to the BGW. The BGW will then pass a SOAP message to the appropriate recipients. The recipients systems will then post the announcement in the ALERT section, as well as, generate an instant message or email to notify the concerned parties.
Diagram: **(pictorial presentation)**	
Analysis:	This event ensures that the data being presented to candidates is accurate and timely. It will also assist the employers by providing them with warnings. These warnings will allow the employer to either change the expiry date or push the recruiters to fill the billet by raising its priority. Recruiters are provided with a notification in order to keep them focused on the most significant events. This event does generate email, which is not desirable, but the significance of the event overrides the desire to minimize spam therefore it is transmitted.

Scenario #:	3
Scenario:	The system must automatically populate fields in RDOL from external sources (Operational Data Storage Enterprise (ODSE), Total Force Structure Management System (TFSMS)) wherever possible.
Attribute(s):	Automation (specifically billet management in this scenario)
Environment:	Normal operating conditions.
Stimulus:	Temporal or physical events trigger this action. Specifically: 1. The system will query billet data sources weekly to ensure that the information contained in the active billet repository is up to date. 2. Any major manual updates to the Marine Corps billet structure or manning structure within the legacy systems (TFSMS) will trigger this event.
Response:	When a trigger occurs the reserve management system will query the Marine Corps legacy systems. The results of the query are used to update the active data repository that the Monster.com site pulls data from.
Architectural decisions:	1. Applications housed in the middle tier will provide access to the different data repositories housed within the Marine Corps Enterprise system. This application will also transform the data retrieved into the proper format that is specified by this system's business rules. 2. The system will then compare on-hand Marines (ODSE data) versus the required Marines (TFSMS data). Any disparities between on-hand Marines (actual) and Table of Organization billets (ideal) will create an advertisement from each vacancy that exists after comparing the two datasets. 3. Query results are transmitted via FTPS from the Reserve Management System to the Monster.com system to ensure the safety and integrity of the data.
Reasoning:	This automation will alleviate much of the work that is currently done by hand. It will also ensure that the billets being advertised are current.

Diagram: **(verbal description)**	When a trigger event occurs the system will query the legacy systems. The results from the query are processed, and vacant billets are identified. These results are converted into a SOAP message and transmitted via the BGW to the Monster system. These active data repositories are updated, and the new job vacancies are available for consumption by reservists.
Diagram: **(pictorial presentation)**	
Analysis:	The ability to query data from two legacy applications is a significant improvement from the previous version of RDOL and is the key to alleviating dirty data and saving numerous man hours. This scenario also stresses the dependence of the "Automation" quality attribute on the "Integration" quality attribute. Because if the system cannot communicate and integrate the data received from the legacy systems the automation of the system will fail. This also makes it evident that the Billet Calculation Module that will query and transform information from the legacy systems plays a significant role in this process. If this module does not work properly the automation quality attribute is not met, therefore, before deployment of the system, this module must undergo significant testing and evaluation.

Scenario #:	4
Scenario:	The system must allow reservists to search postings, modify resumes, and edit preferences.
Attribute(s):	Usability
Environment:	Normal operating conditions.
Stimulus:	1. A reservist queries the site for vacant positions of interest. 2. A reservist chooses to view or modify his or her resume. 3. A reservist changes their notification preferences within the system.
Response:	1. The Monster.com system will generate a query against the active data repository housed within Monster's domain. 2. The Monster.com will generate a query against the Marine Corps data repositories. The results of the query will auto-populate a member's resume. 3. The reservist will make changes directly to a "preference" table that the system uses as arguments for functions of the system.
Architectural decisions:	Auto-populating fields make it easier for the user to fill out resumes while eliminating the chance of inputting dirty data, and it also ensures that the reservists are updating their personal information.
Reasoning:	The following architectural decisions were made when creating this application: Viewing Vacant Positions 1. All active job vacancies are housed in the active data repository. 2. All functionality to query the active data repository are contained in the Monster.com system. Modifying Resume 1. All personal information fields of the resume will populate automatically by the information contained in the Marine Corps data repositories (MCTFS/ODSE). 2. Every transaction is logged and accounted for to ensure that every transaction is processed properly.

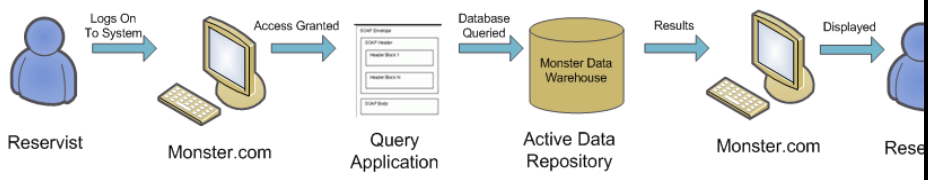
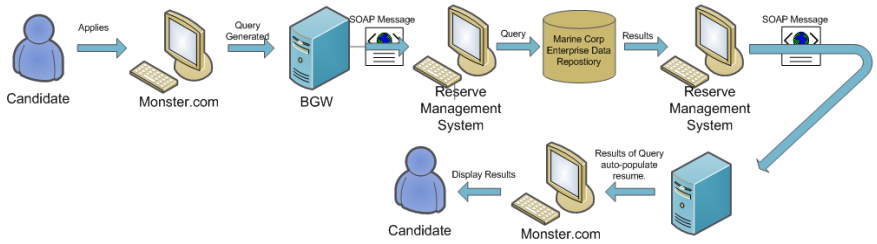
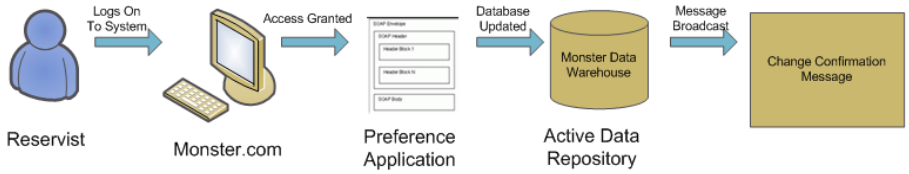
	3. All personal data is transmitted via HTTPS or FTPS using a SSL. Each SOAP header will contain a ticket that will uniquely identify and verify a user and his/her privileges. 4. Only certain fields are modifiable by the candidate. If a candidate identifies a field that needs correction, but is not modifiable, the user is directed to the resource that can modify it (MOL). Notification Preferences 1. Preferences are stored in a table in the active data warehouse. 2. Reservists will use an application to change the information contained within this warehouse. 3. Business rules will limit a Manager can change.
Diagram 1: **(verbal description)**	Once a reservist is logged on to the system and his/her credentials are verified, the reservist will input their search criteria into the query application. The Query Application queries the active data repository and the results are displayed for the reservist.
Diagram 1: **(pictorial presentation)**	
Diagram 2: **(verbal description)**	Once a reservist is logged on to the system and his/her credentials are verified, the reservist requests his or her resume. The system generates a query which is transmitted via the BGW to the Reserve Management System. The Reserve Management system queries the Marine Corps Enterprise data repositories and the results are sent back to the Monster system. The Monster system processes the information and uses it to populate the resume requested by the reservist.
Diagram 2: **(pictorial presentation)**	

Diagram 3: **(verbal description)**	Once a reservist is logged on to the system and his/her credentials are verified, the reservist will input his/her search criteria into the query application. The Preference Application will provide a structure environment in which the reservist can directly update their preference information in the active data repository.
Diagram 3: **(pictorial presentation)**	
Analysis:	The system responds well to the scenarios. The following were some vulnerabilities that were noted during the analysis: First, the preference application worked directly with table data which, if not done correctly, could negatively affect the normalization and the integrity of data being stored in the repository. Second, the auto-population of a resume will significantly limit which fields the reservist can update. Specifically it will limit them to updating recall information and address information. The Marine Corps will not allow a reservist to modify or update any professional or other personal attribute without coordinating it with the Marine Corps personnel office. This will significantly slow this process down, and could lead to resumes being submitted with incorrect data to circumvent this tedious and slow process.

F. RISK MANAGEMENT STRATEGY

As with any architecture, there are potential flaws associated with our proposed architecture. Our goal for this section is to minimize the risk that these "flaws" expose to our stakeholders. In that light, we examined our proposal from the top down, and identified any weak areas or potential threats to the proposed architecture. We then thoroughly analyzed each of these weakness, and attempted to determine the probability, analytically not qualitatively, that the event would occur, as well as, we attempted to prognosticate the scope of the damage to the system if the event occurred. We then used the results of the analysis to prioritize the different risks to the proposed architecture. Each of these risks are presented below in sequential order.

1. Single Point of Failure

The BGW is a single point of failure, and represents the biggest threat to the system. The Internet has no business hours and the numerous users of RDOL are spread throughout the globe in many different time zones. With the BGW being a single point of failure, the cost of losing this middleware is compared to the requirements identified in the QA "availability" as defined by the stakeholders. As Gorton pointed out, "Replicating components is a tried and tested strategy for high availability. When a replicated component fails, the application can continue executing using replicas that are still functioning. This may lead to degraded performance while the failed component is down, but availability is not compromised [26]."

Coupled with availability is the issue of recoverability. Recoverability is defined as the capability to reestablish the systems required performance levels and restore data that was interrupted during the outage/failure. In the case of RDOL, during a system outage, the only billets that could not be automatically recreated very quickly would be the Individual Augment (IA)/Active Duty Operational Support (ADOS) billets that were manually entered. A broadcast message could be sent following the outage notifying users that there was an outage and to validate all recent manually inputted billets. Component replication does ensure as close to 100% availability but comes at a significant cost. This cost would have to be weighed against a less complicated solution such as daily off-site backups of the active billet repository.

Finally, mitigating the risk of the BGW acting as a single point of failure boils down to the amount of cost you are willing to incur. At one end of the spectrum you could have multiple, redundant, load balanced applications at separate sites that will process and transmit data in parallel (this can create its own set of problems with inconsistencies/ transactions). On the other end of the spectrum, you have the minimum of nightly off-site backups. It comes down to how much you are willing to spend to get the availability/recoverability that is desired. No solution is perfect; it comes down to risk versus gain. In this case, due to the nature of the proposed system we recommend that you minimize the costs of the system by conducting nightly backups. Monster.com has numerous mirror sites to protect the BGW, so the cost of the redundant systems need

not be incurred by the government, and the backing up the daily transactions would provide additional protection to the risk posed by using star topology.

2. Unauthorized Access

Due to the large number and dispersed access points to the system, unauthorized access to the system poses a significant threat to its users and the Marine Corps. To mitigate this risk an active role management program is implemented. The primary responsibility of the management of this program is the Career Management Team (CMT) system administrators. Users of the system should only have access to areas in which they have been granted privileges. If a user goes beyond the boundaries established by the system administrator, his or her account is locked out and system administrators will be notified of the breach. More specifically, in order to mitigate the risk between usability and security, access to resumes is granted only to employers and managers. The employers and manager website access will utilize a Common Access Card (CAC) with Public Key Infrastructure (PKI) to ensure those users accessing personal data are trusted. In order to keep usability high for our most important end users (the reservists), they will be able to login, browse and apply for billets, manager their resumes and view their personal information using only a strong password. The only personnel that would need to review resumes containing personal data are employers. All employers using this system will have access to CAC readers, and must have completed a DD 2875 (System Authorization Access Request) which signifies that the user has attended the required Information Assurance training. By PKI enabling the manager and employer portion of the system, it will be significantly more difficult to breach personal data.

Additionally, specific ranges are added to each employers profile, for example, if the employer manages a Motor Transport IMA detachment, then they do not need to see the resume of a Gunnery Sergeant with an MOS of 3381 (Cook). When establishing his or her credentials the system could be designed to force the CMT system administrators to click checkboxes for each required MOS necessary for that specific billet manager. The Master access list will be maintained by Monster and updated by the CMT system

managers. This will ensure that the authorization tickets contained in the SOAP headers are able to identify a unique member and his or her access privileges.

3. Security Concerns

There is a significant security concern when government and commercial products are coupled. This system uses the hub and spoke architecture which decouples the systems and keeps them isolated from each other. Their only communication is through the intermediary hardware, which limits the threat. The system will use Customer Access Tickets (CAT), which are encrypted strings that include authentication information for the server sending the request (username/password and IP) to uniquely identify agencies, as well as, the users. This system guarantees the identity of the both entities.

4. Data Entry Errors

Due to volume of personnel entering data into the system, there is a significant risk of information inadvertently being modified or entered incorrectly. For example, an advertisement may be deleted accidentally or an application inputted might contain such mistakes as spelling or punctuation errors. To ensure that information is not changed or modified inadvertently by a rogue user, all information entered into the system will be tied to the system by the user's unique identification. Only the author or a system administrator can change the document after it has been posted. Furthermore, all advertisements will be tied to the Billet Identification Code (BIC). A BIC is an 11 character alpha-numeric text block that uniquely identifies a billet within a specific reporting unit code table of organization. Employers are limited to posting advertisements for vacant billets for jobs that correspond to specific BICs assigned to their RUC; this will prevent any type of cross posting between employers and keep them from deleting one another's advertisements. In the case of the IA/ADOS billets which do not have a BIC, all the input form data will be auto populated by a query of the MCTFS/TFSMS legacy systems. This will prevent dirty data from being entered into the system.

In order to ensure that all data that is used to auto populate applications used by the employers and the applicants, information will be drawn from the Marine Corps fixed data repositories (MCTFS/TFSMS). For example, in the case of the reservist's resume, all information will be drawn directly from MCTFS with the exception of a free-form text block in which a reservist can input any additional information that is not MCTFS reportable. This block could include information relating to their civilian employment/school schedule.

5. Potential Hidden Costs

There are potential hidden costs due to the system being a hybrid solution. To mitigate this risk all costs will be defined, fixed and structured into the contract at the inception of the deal the following are some additional cost reduction strategies that can be employed:

- A significant portion of the costs will be incurred at inception due to the nature of the solution being utilized, i.e. COTS technologies integrated with the PLA. Once the system is up and running, maintenance costs will be minimal, but the contract will be specific that Monster.com will be responsible for the life cycle maintenance of their systems.
- Costs can also be controlled by prioritizing the wish list generated by the stakeholders of the system. The prioritization will be done by the key stakeholders to ensure that they agree to the ranking of the different attributes. "Wishes" with a low priority will only be funded if excess funds are available.
- Interview other government agencies that are currently utilizing a Monster Government Solution (MGS). Analyze their contract (most government agencies shouldn't treat these contracts as intellectual property), speak with their IT procurement department; find out where money could have been saved. Look for costs that can be minimized or avoided. These vendors often tack on numerous additional charges that may seem important or necessary, but ask other government monster users how important or necessary they really are. In the case the Marine Corps Reserve system, will their system really require that a Monster

contractor be on call that can troubleshoot the system in two minutes or less? This is not worth it for the Marine Corps Reserve, and money can be saved by eliminating this requirement.

- When interviewing other users of the MGS users determine who did the integration of legacy applications with the new system. Determine what was their Capability Mature Model (CMM) level is, and determine if the project manager PMI certified. The thought behind this it to use the lowest level of CMM possible to keep costs down.
- Don't fall for bells and whistles you don't need. For example, when buying car it is easy to buy unnecessary upgrades or accessories. The same is true when negotiating what services will be provided by a COTS vendor. To minimize this risk the architect must clearly define what is actually required. By doing this numerous extra expenses can be eliminated.
- Build a cost matrix with following arguments inputted into a cost function:
    - Identifying criteria – detailed cost list of the different services that are available for purchase.
    - Rating of each criterion – a weighting mechanism to adjust the cost of the different services.

  From this matrix a weighted total score will be generated for each alternative. Obviously more arguments can be added to the function, but the point is you can use this tool to determine if the costs being charged are agreeable.

- If Monster utilizes an enterprise license agreement (ELA), ensure that detailed figures are obtained in regards to how costs are calculated. For example, if Monster charges per transactions through the BGW, or concurrent users that must be known up front.

These five risks obviously are not the only risks that the system will exposed to, but they do represent the most significant and viable threats to the proposed system. It is important that, at minimum, that these risks are aggressively managed and mitigated. Other risks that were identified but not addressed in this document include:

organizational buy-in, residual risks associated with the relationship between the COTS systems and government system and capacity concerns. Obviously, these are not all inclusive, but they make it apparent that before an actual system is selected another thorough examination of the risks needs to be conducted.

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VII. SUMMARY, CONCLUSIONS AND FUTURE RESEARCH

The primary objective of this thesis is to provide the Marine Corps with a thorough bottom up System Analysis of the next generation billet advertisement system that will replace RDOL. The analysis includes a detailed systems analysis, a generic architecture, logical data models, process models and a system model which provides the Marine Corps with a blueprint of the requirements for the next generation system of record. The secondary objective of this thesis was to analyze current system architectures that advertise and fill job vacancies within the Department of Defense (DoD), as well as commercial-off-the-shelf (COTS) products in order to identify what architecture should be leveraged by the Marine Corps during its next generation system. The combination of these two objectives will be coalesced together to form a roadmap for the Marine Corps to follow for the design of its next generation system.

This chapter is organized as follows: First a summary of the results uncovered during literature review, examination of similar systems, and the system analysis and architectural design of the proposed system is presented. Second, conclusions drawn from this thesis research are presented and discussed. The third section provides direction for future research, focusing on improvements and refinements that will ultimately provide the Marine Corps with an optimal and adaptive system to advertise vacant reserve billets.

A. SUMMARY OF FINDINGS

1. Literature review

We garnered valuable information from the analysis the Air Force's ViPS, the Navy's JOAPPLY, and Monster.com subsidiary USAJOBs. Specifically, we were able to capture industry best practices, and identify significant weaknesses and shortcomings that should be avoided in the design of the new system. These lessons learned were included in the logical design of the Marine Corps' next generation system. Some of the more pertinent learning points collected from this literature review were: (1) The Air Force's ViPS system was highly successful because of a thorough requirements analysis performed by the Air Force and the contractor SAIC during the design and development

of the system. The Marine Corps must build upon this idea and ensure that the stakeholder's requirements are genuinely understood before building their next generation system. Beyond a detailed requirements analysis, the ViPS graphical user interface was intuitive and the functionality was sound, which makes it a tool that its stakeholders actually use. This currently isn't the case for RDOL, and the next system fielded by the Marine Corps needs to address this deficiency. (2) The Navy's JOAPPLY system provided a good example of how a user can use a web enable billet advertisement system to manage their career. Specifically, JOAPPLY provided a reservist with dynamic and robust set of career management tools that allowed him/her to be an active participant in the detailing process. Unfortunately, the system as a whole was built haphazardly and lacked other significant functionality, which, again, emphasizes the importance of system requirements analysis and documentation. The desirable career management attributes were incorporated into the quality attributes for the proposal of the next Marine Corps system. (3) The USAJOBs provided the Marine Corps with a pertinent and real example of how the government can harness the synergy and prowess of mature turnkey COTS product. This product also provided the blueprint of an architecture that is viable for a web enable billet advertisement system.

2. Results of System Analysis

The primary reason the current system failed is due to the lack of a comprehensive requirements analysis at the inception of the project. During the requirements analysis for RDOL, the majority of pertinent stakeholders were excluded from the process, which resulted in a fragmented and incomplete system specification. Therefore, the emphasis of this thesis has been on specifying all of the stakeholder's requirements for the next generation Marine Corps billet advertisement system. This was accomplished by identifying the stakeholder's requirements for an ideal billet advertisement system through interviews and working groups. The results were broken into two functional areas: Data Business Requirements and Process Business Requirements.

The Data Business Requirements section focused on the data and the data structure required for the next system to be successful. This analysis revealed four main

top-level entities. These are candidates, employers, managers and recruiters. The attributes and the relationships between these entities were expanded upon using an Entity Relationship Diagram. Ultimately, this process captured the basic data structure required for this system to be successful, but these only represent a high-level view of the data structure for the system. The Marine Corps needs to refine these data requirements before they complete the acquisition process.

The Process Business Requirements defined the scope of the system, as well as, the functional requirements of the system. The scope of the system is presented in a Context Data Flow Diagram. This diagram clearly defines the external interactions and boundaries of the proposed system. This process model was further refined by using a Functional Decomposition Diagram, which expands upon the system by breaking it down into its core functional constituents. These are the candidates, employers, managers and recruiters. These four sub-groups are further broken down into their core functional requirements or each sub-group which are expanded upon and defined by use cases.

3. Results of Architecture Analysis

The results of the requirements analysis yielded enough information to identify specific components that can be used by the system, but this analysis did not address the framework, or architecture, that needs to be implemented to support these components. To address this disparity, the Architecture Tradeoff Analysis Method (ATAM) was used to identify an appropriate architecture to meet the needs of the proposed system. The ATAM is a nine-step methodology for evaluating architecture designs that uses stakeholder defined quality attributes as a metrics to gauge whether or not the proposed architecture will meet its defined objectives.

The ATAM process, along with the results of the systems analysis and literature review, identified the hub and spoke topology as the best solution for this project. It afforded the Marine Corps with the most robust and versatile solution for its problem set. Using scenarios as a medium, quality attributes were used to measure the effectiveness of the proposed architecture. In the instances that were substantiated, the proposed architecture met all of the requirements defined by the quality attributes, and the

proposed architecture appears to be viable and a good selection. But further analysis is needed as only a small subset of the quality attributes have been used to stress the proposed architecture, and a more thorough testing has to be completed before the Marine Corps can unequivocally call the proposed architecture the right one.

The ATAM also provided additional findings that were useful to the project. Specifically, it helped further define and clarify stakeholder requirements; it identified some potential risks early in the life-cycle of the system, and an increased communication among stakeholders. The analysis also made it apparent that the complexity inherent in designing a real world web application for numerous stakeholders that architecture tradeoff analysis is rarely a straightforward activity. Each step of the ATAM answered some design questions, but it also brought some issues to light that we had neglected to focus on.

B. CONCLUSIONS

The problems and issues surrounding RDOL can be eliminated. It will, however, take time, money, and the combined effort on the part of many people. In the midst of the long war, it is clearly evident that the reserve is an integral part of the Marine Corps total force. This integration hinges on the recognition that the ability for our reservists to be able to easily search and identify available opportunities is of the utmost importance. Additionally, it is equivocally important for employers to have those same abilities to seek out potential reservists to fill various types of reserve billets. The current manpower struggles the Marine Corps faces requires that we do our best to put our reserve Marines in the right billets at the right time. The proposed architecture and requirements analysis presented in this thesis will provide a solid foundation for the next generation system, but, as noted earlier, more work has to be done to ensure that the Marine Corps does not build a system that does not fully meet its requirements.

C. FUTURE RESEARCH

While this thesis focused on understanding the requirements and design of the new system, there is a considerable amount of work that needs to be accomplished. This work includes the completion of the remaining steps of the FAST and ATAM methodologies which include:

Decision Analysis: During this phase candidate solutions are identified, feasibility analysis is conducted, and a candidate system is recommended that best fits the needs of the Marine Corps. Feasibility analysis includes technical, operational, economic, schedule and risk feasibility. At the end of this phase, a system proposal is generated which will include conclusions and recommendations.

Physical Design: This phase commences once a candidate solution has been selected, and has proven to be feasible. It takes the logical model and converts it into an operating physical model. At this point a determination on what technologies best provide a solution to the problem domain will be decided upon, such as, the technical requirements of the database and any software or middleware requirements. Upon completion of this phase an operating prototype is built.

Construction and testing: Once the physical model is built, developers can begin constructing and testing components of the system. During this phase developers begin beta testing the prototype built in the Physical Design phase. Results from the beta-testing are delivered to major stakeholders.

Installation and delivery: Once construction and testing are complete, the system can be delivered and installed. This step would be addressed by Headquarters Marine Corps.

Another element not addressed by this thesis work is the important element of cost. Specifically, a detailed cost analysis of proposed COTS hybrid solutions needs to be completed.

Finally a feasibility study focused on the viability of porting the Air Force ViPS application and modifying it to become a Marine Corps system of record. Our discussions with the Air Force revealed that they own the source code and all the necessary documentation. Although our personnel systems are different, ViPS currently meets many of the requirements and quality attributes documented in this thesis work.

In conclusion, we strongly believe the results and recommendations of this thesis provide the Marine Corps with a solid foundation for developing the next generation Marine Corps Reserve Billet Advertisement System. In addition, the thesis provides an archetype that can be leveraged by the Marine Corps in building other future systems. This will not only result in money savings, but will ultimately result in better and more robust future Marine Corps application systems. At a minimum, both of these results and recommendations ensure that the Marine Corps will produce a much superior Billet Advertisement System than the existing one.

APPENDIX A. USE CASE GLOSSARY

CANDIDATE USE CASES			
Id	**Use-Case Name**	**Use-Case Description**	**Participating Actors and Roles**
1	Contact employer for additional information	This use case describes how a candidate can submit information to an employer to gain additional details about an advertisement.	Candidate (Primary Actor) Employer (System Actor)
2	Create Application	This Use Case describes how a Candidate applies for an advertised billet. (Member may apply for multiple positions.)	Candidate (Primary Actor) Employer (Primary Actor)
3	Review Application	This Use Case describes how a Candidate reviews all the billets they have applied for. (No historical data will be displayed.)	Candidate (Primary Actor)
4	Update Application	This Use Case describes how a Candidate updates a current application that has already been submitted. (Application can be updated as long as it has not been approved by an Employer.)	Candidate (Primary Actor) Employer (Primary Actor)
5	Delete Application	This Use Case describes how a Candidate deletes an application that has been previously submitted.	Candidate (Primary Actor) Employer (Primary Actor)
6	Create Billet Lead Subscription	This Use Case describes how a Candidate can create a subscription to receive updates (email or notification on portal) if new billets that fit his or her criteria (geo loc, dates) have been posted, updated or deleted.	Candidate (Primary Actor) Employer (External Receiver) Recruiter (External Receiver)
7	Review Billet Lead Subscription	This Use Case describes how a Candidate can review their subscriptions without making any modifications to them.	Candidate (Primary Actor)
8	Update Billet Lead Subscription	This Use Case describes how a Candidate can modify their current subscriptions.	Candidate (Primary Actor) Employer (External Receiver) Recruiter (External Receiver)
9	Delete Billet Lead Subscription	This Use Case describes how a Candidate can delete any of their current subscriptions.	Candidate (Primary Actor) Employer (External Receiver) Recruiter (External Receiver)
10	Create personal web portal content	This use case describes how a candidate can create a personalized web portal upon initial login.	Candidate (Primary Actor)

Id	Use-Case Name	Use-Case Description	Participating Actors and Roles
11	Review personal web portal content	This use case describes how a candidate can review the customizable information contained within their personal web portal (e.g. RSS feeds, content)	Candidate (Primary Actor)
12	Update personal web portal content	This use case describes how a candidate can update the customizable information contained within their personal web portal (e.g. RSS feeds, content)	Candidate (Primary Actor)
13	Delete personal web portal content	This use case describes how a candidate can delete the customizable information contained within their personal web portal (e.g. RSS feeds, content)	Candidate (Primary Actor)
14	Use External Marine Corps Services	This Use Case describes how a Candidate can use external links to manage their career.	Candidate (Primary Actor)
15	Review Application History	This use case describes how a candidate can view the current details of all active and prior billet applications.	Candidate (Primary Actor)
16	Participate in community events	This Use Case describes how a Candidate can use the community tools available in the RBAS system.	Candidate (Primary Actor) Employer (External Receiver) Recruiter (External Receiver)
17	Search Available Advertisements	This Use Case describes how a Candidate can search for jobs posted by Employers that match their search criteria.	Candidate (Primary Actor) Employer (Primary Actor)
18	View applicant pool for an active advertisement	This use case describes how a candidate can view the current details of an active advertisement with respect to other candidates that have applied for a billet.	Candidate (Primary Actor)
19	Create Reserve Qualification Summary	This use case describes how a candidate can create an electronic Reserve Qualification Summary (RQS).	Candidate (Primary Actor) Employer (External Receiver) Recruiter (External Receiver)
20	Review Reserve Qualification Summary	This use case describes how a candidate can review their electronic Reserve Qualification Summary (RQS).	Candidate (Primary Actor)
21	Update Reserve Qualification Summary	This use case describes how a candidate can update their electronic Reserve Qualification Summary (RQS).	Candidate (Primary Actor) Employer (External Receiver) Recruiter (External Receiver)

Id	Use-Case Name	Use-Case Description	Participating Actors and Roles
22	Delete Reserve Qualification Summary	This use case describes how a candidate can delete their electronic Reserve Qualification Summary (RQS).	Candidate (Primary Actor) Employer (External Receiver) Recruiter (External Receiver)
23	Manage Billet Leads	This Use Case describes how a Candidate can manage all leads that have been generated for advertisements that are included in their subscriptions.	Candidate (Primary Actor) Employer (System Actor)
RECRUITER USE CASES			
1	Search all available billets	This Use Case describes how a recruiter can search for billets that match their search criteria (MOS, GeoLoc, Dates).	Recruiter (Primary Actor) Employer (External Server)
2	Search all available candidates.	This Use Case describes how a Recruiter can search all available candidates by specific criteria (MOS, rank, geo loc, dates).	Recruiter (Primary Actor)
3	Manage Candidate Leads	This Use Case describes how a Recruiter can manage all leads that have been generated for billets that are included in their district.	Recruiter (Primary Actor) Candidate (External Server)
4	View Adhoc Report	This Use Case describes how a Recruiter generates and views an adhoc report.	Recruiter (Primary Actor)
5	View Vacant Billet Report	This Use Case describes how a Recruiter views a report containing ALL vacant billets with or without the use of a filter.	Recruiter (Primary Actor)
6	Create Personal Web Portal Content	This use case describes how a Recruiter can create a personalized web portal upon initial login.	Recruiter (Primary Actor) Manager (External Actor)
7	Review Personal Web Portal Content	This use case describes how a Recruiter can review the customizable information contained within their personal web portal (e.g. RSS feeds, content)	Recruiter (Primary Actor)
8	Update Personal Web Portal Content	This use case describes how a Recruiter can update the customizable information contained within their personal web portal (e.g. RSS feeds, content)	Recruiter (Primary Actor)
9	Delete Personal Web Portal Content	This use case describes how a Recruiter can delete the customizable information contained within their personal web portal (e.g. RSS feeds)	Recruiter (Primary Actor)

Id	Use-Case Name	Use-Case Description	Participating Actors and Roles
10	Create Candidate Lead Subscription	This Use Case describes how a Recruiter can create a subscription to receive updates (email or notification on portal) if new candidates that fit his or her criteria (geo loc, dates, MOS) have been posted, updated or deleted.	Recruiter (Primary Actor) Candidate (External Server)
11	Review Candidate Lead Subscription	This Use Case describes how a Recruiter can review their subscriptions without making any modifications to them.	Recruiter (Primary Actor)
12	Update Candidate Lead Subscription	This Use Case describes how a Recruiter can update their current subscriptions.	Recruiter (Primary Actor) Candidate (External Server)
13	Delete Candidate Lead Subscription	This Use Case describes how a Recruiter can delete any of their current subscriptions.	Recruiter (Primary Actor) Candidate (External Server)
14	Facilitate community events	This use case describes how a Recruiter manages the forum and blog contents within their recruiting district.	Recruiter (Primary Actor) Employer (External Server) Candidate (External Server)
MANAGER USE CASES			
1	Create Roles For Users or Groups of RBAS	This Use Case describes how system managers control the access and privileges of system users by creating individual and group accounts.	System Manager (Primary Actor) Employer (External Receiver) Candidate (External Receiver) Recruiter (External Receiver)
2	Review Roles For Users or Groups of RBAS	This Use Case describes how system managers can review the roles and rights assigned roles to a user or a group.	System Manager (Primary Actor)
3	Update Roles For Users or Groups of RBAS	This Use Case describes how system managers can update/modify the access and capabilities of system users/groups.	System Manager (Primary Actor) Employer (External Receiver) Candidate (External Receiver) Recruiter (External Receiver)
4	Delete Roles For Users or Groups of RBAS	This Use Case describes how system managers can delete the access and capabilities of system users/groups.	System Manager (Primary Actor) Employer (External Receiver) Candidate (External Receiver) Recruiter (External Receiver)
5	Create Personal Content for Management and Site Portals	This Use Case describes how a System Manager can create content for the management web portal as well as control the core content for the entire RBAS site.	System Manager (Primary Actor) Employer (External Receiver) Candidate (External Receiver) Recruiter (External Receiver)
6	Review Management and Site Web Portal Content	This Use Case describes how a System Manager can review settings for both the Managerial and Site web portal for the Reserve Billet Advertisement System.	System Manager (Primary Actor)

Id	Use-Case Name	Use-Case Description	Participating Actors and Roles
7	Update Management and Site Web Portal Content	This Use Case describes how system managers can update overall system portal content. (e.g.: broadcast messages to ALL system users.)	System Manager (Primary Actor) Employer (External Receiver) Candidate (External Receiver) Recruiter (External Receiver)
8	Delete Management and Site Web Portal Content	This Use Case describes how a System Manager can delete settings for the Management or Site web portal for the Reserve Billet Advertisement System.	System Manager (Primary Actor) Employer (External Receiver) Candidate (External Receiver) Recruiter (External Receiver)
9	Generate adhoc reports	This Use Case describes how a System Manager generates and views ad hoc reports.	System Manager (Primary Actor)
10	Generate detailed user report	This Use Case describes how a System Manager generates a detailed report on an individual user.	System Manager (Primary Actor)
11	Generate system usage report	This Use Case describes how a System Manager generates a report that tracks the use of the RBAS system.	System Manager (Primary Actor)
12	Generate user overview report	This Use Case describes how a System Manager generates a report that displays all the users of a specific group or category that is registered in the RBAS system.	System Manager (Primary Actor)
13	Ensure all form input data is valid and complete	This Use Case describes how the RBAS system automatically checks all input for completeness and accuracy.	System (Primary Actor) System Manager (External Receiver) Employer (External Receiver) Candidate (External Receiver) Recruiter (External Receiver)
14	Automated Update of Candidate Table	This use case describes how a candidate's personal information gets populated from MCTFS.	System (Primary Actor)
15	Automated Update of MOS Table	This use case describes how the MOS table gets populated from MCTFS.	System (Primary Actor)

Id	Use-Case Name	Use-Case Description	Participating Actors and Roles
16	Perform Limited Modification to the System.	This Use Case describes how system managers will be able to modify limited website content. (e.g.: change aesthetics of web front end, style sheets, nomenclature e.g. ADSW to ADOS)	Manager (Primary Actor) Candidate (External Receiver) Recruiter (External Receiver) Employer (External Receiver)
17	Ensure that user credentials are verified by use of CAC or strong password during login process	This use case describes the system actions performed when a user logons to the system. Credentials will be verified with a Common Access Card (CAC) or strong password.	System (Primary Actor) Manager (External Server) Candidate (External Server) Recruiter (External Server) Employer (External Server)
18	Manage Trouble Call Queue	This Use Case describes how managers will be able to view and manage all trouble calls submitted by users of the system.	Manager (Primary Actor) Candidate (External Server) Recruiter (External Server)
EMPLOYER USE CASES			
1	Create Advertisement	This use-case describes the action of manually inputting a new billet/advertisement into the system to be viewed by potential candidates.	Employer (Primary Actor) Candidate (External Receiver) Recruiter (External Receiver)
2	Review Advertisement	This Use Case describes how an Employer manually reviews all the advertisements they have created which are currently posted.	Employer (Primary Actor)
3	Update Advertisement	This use-case describes the action of updating a manually inputted billet/advertisement in the system.	Employer (Primary Actor) Candidate (External Receiver) Recruiter (External Receiver)
4	Delete Advertisement	This use-case describes the action of deleting a manually inputted billet/advertisement from the system.	Employer (Primary Actor) Candidate (External Receiver) Recruiter (External Receiver)
5	Create automated advertisement	This use case describes how the system generates billet advertisements automatically by comparing MCTFS O/H data versus T/O data.	Employer System (Primary Actor) MCTFS/TFSMS (External Server) Recruiter (External Receiver) Candidate (External Receiver) Employer (External Receiver)

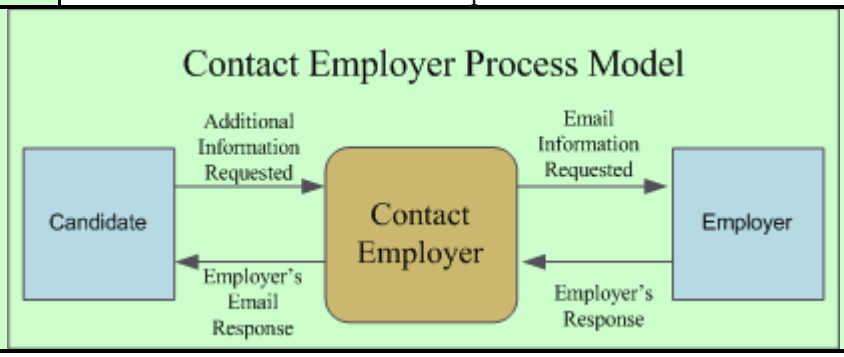
Id	Use-Case Name	Use-Case Description	Participating Actors and Roles
6	Create subscription to automated candidate search services	This Use Case describes how an Employer can create a subscription to automatically receive updates (email or notification on portal) if new candidates that fit his or her criteria (geo loc, dates, MOS) have recently registered, posted new or updated information or deleted items from their profile.	Employer (Primary Actor) Candidate (External Server)
7	Review subscription to automated candidate search services	This Use Case describes how an employer can review their subscriptions without making any modifications to them.	Employer (Primary Actor)
8	Update subscription to automated candidate search services	This Use Case describes how an employer can modify their current subscriptions.	Employer (Primary Actor) Candidate (External Server)
9	Delete subscription to automated candidate search services	This Use Case describes how an employer can delete any of their current subscriptions.	Employer (Primary Actor) Candidate (External Server)
10	View current application pool	This use case describes how an employer can view all leads/applications that have been submitted for billets in their purview.	Employer (Primary Actor) Candidate (External Server)
11	Verify validity of automated billet generation	This Use Case describes how Employers verify the billets generated automatically by the RBAS system.	Employer (Primary Actor) Candidate (External Receiver) Recruiter (External Receiver)
12	Manually search all Candidates by avenue of interest (MOS/Dates)	This Use Case describes how an Employer can search for interested Candidates that match their search criteria.	Employer (Primary Actor) Candidate (External Server)
13	Hire Candidate	This use case describes how an employer selects a particular candidate for a billet.	Employer (Primary Actor) Candidate (External Receiver) Recruiter (External Receiver)
14	Reject Candidate	This use case describes how an employer rejects a particular candidate for a billet.	Employer (Primary Actor) Candidate (External Receiver) Recruiter (External Receiver)
15	Communicate with candidate pool	This use case describes how an Employer can conduct mass communication with all candidates applying for a specific billet.	Employer (Primary Actor) Candidate (External Receiver)
16	Communicate with potential candidates	This use case describes how an Employer can conduct mass communication with all candidates who might be interested in a specific billet. (e.g.: New billet for a 0659 opens up, employer can communicate with all RBAS users with 06XX MOS.)	Employer (Primary Actor) Candidate (External Receiver)

Id	Use-Case Name	Use-Case Description	Participating Actors and Roles
17	Create employer web portal content	This use case describes how an employer can create a personalized web portal upon initial login.	Employer (Primary Actor)
18	Review employer web portal content	This use case describes how an employer can review the customizable information contained within their personal web portal (e.g.: RSS feeds, content)	Employer (Primary Actor)
19	Update employer web portal content	This use case describes how an employer can update the customizable information contained within their personal web portal (e.g.: RSS feeds, content)	Employer (Primary Actor)
20	Delete employer web portal content	This use case describes how an employer can delete the customizable information contained within their personal web portal (e.g.: RSS feeds, content)	Employer (Primary Actor)
21	Generate adhoc reports	This Use Case describes how an Employer generates and views ad hoc reports.	Employer (Primary Actor)
22	Generate advertisement history	This use case describes how an employer can view a report which displays advertisement history information for all current applications.	Employer (Primary Actor)
23	Generate detailed advertisement report	This use case describes how an employer can generate a report which lists the details of all current advertisements.	Employer (Primary Actor)
24	Generate advertisement response report	This use case describes how an employer can view a report which displays advertisement response information for all current applications.	Employer (Primary Actor)
25	Generate timed report/email (30/14/0/-14)	This use case describes how the system generates a temporal report/email which outlines the billets that will expire soon.	Employer System (Primary Actor) Candidate (External Receiver) Employer (External Receiver)
26	Manage Candidate Leads	This Use Case describes how an Employer can manage all leads that have been generated for advertisements that are included in their purview.	Employer (Primary Actor) Candidate (External Server)

APPENDIX B. CANDIDATE USE CASES

Candidate Subsystem

USE CASE NAME:	Contact employer for additional information	**USE CASE TYPE**
PRIORITY:	Low	System Analysis
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer	
DESCRIPTION:	This Use Case describes how a candidate can contact an employer for additional information about an advertisement.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	Candidate clicks on contact employer link within an advertisement.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Candidate actuates additional information link within an advertisement.	**Step 2**: System opens a request form window.
	Step 3: The user inputs desired request and clicks "submit".	**Step 4**: System checks validity of information and transmits an email and presents a success message.
ALTERNATE COURSES:	**AA Step 3**: System reports error if link is not operational. Error message is displayed.	
	SR Step 4: If information is not valid, system reports error to user.	
	AA Step 5: User corrects information and clicks submit. Process re-enters at step 4.	
CONCLUSION:	Candidate has successfully transmitted information request to employer.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



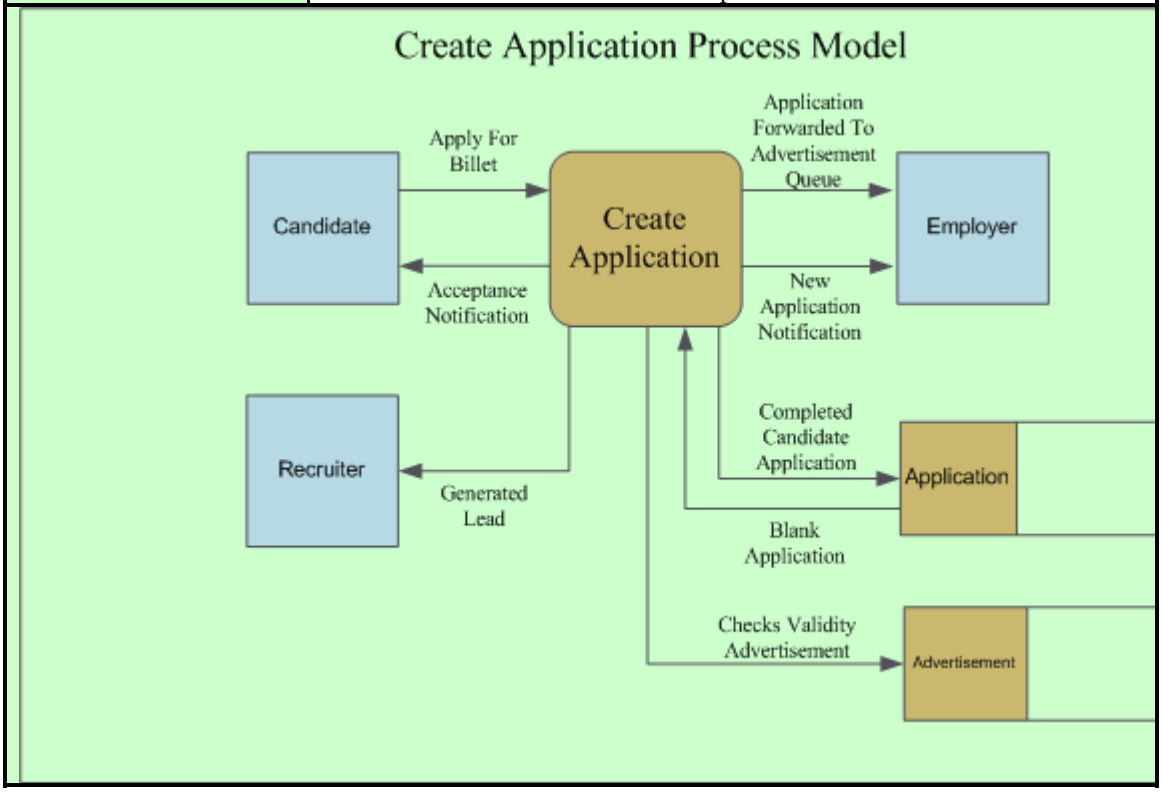
Candidate Subsystem

USE CASE NAME:	Create Application	**USE CASE TYPE**
PRIORITY:	High	
SOURCE:	System Requirement	System Analysis
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter	
DESCRIPTION:	This Use Case describes how a candidate applies for an advertised billet.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The Use Case is initiated when the candidate submits an application.	

TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate applies for a billet advertised on the website by clicking on the hyper link or "apply for" button associated with the desired billet.	**Step 2**: The system verifies that all of the required fields are filled out in the input form.
		Step 3: The system verifies that the billet being applied for is still valid.
	Step 5: The candidate responds positively to system prompt.	**Step 4:** System prompts user on whether they are sure that they want to submit this application.
		Step 6: The system accepts the application and stores it.
		Step 7: The system updates the applicable employer application queue for that billet.
		Step 8: The system generates leads for Employers and Recruiters that have subscribed to automated candidate search services.
		Step 9: The system generates a tickler email for the employer advertising the billet and the recruiter in the appropriate district.
		Step 10: The system generates an email for the candidate acknowledging the systems acceptance of their application.

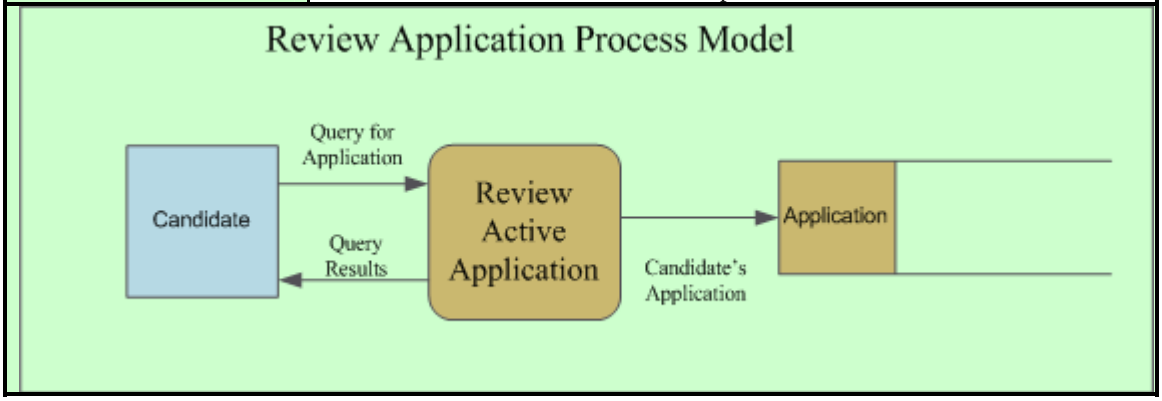
ALTERNATE COURSES:	**SR Step 3**: All the required information not present, error message sent to user.
	AA Step 4: Candidate corrects the error and resubmits.
	Return to step 4 of the "Typical Course of Events"
	OR
	AA Step 5: The candidate responds negatively to system prompt and request is canceled.

CONCLUSION:	Candidate has successfully applied for billet and received confirmation of application.
POST-CONDITION:	User is returned to portal homepage.
BUSINESS RULES	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS	
ASSUMPTIONS:	User must have access to NMCI compliant web browser.



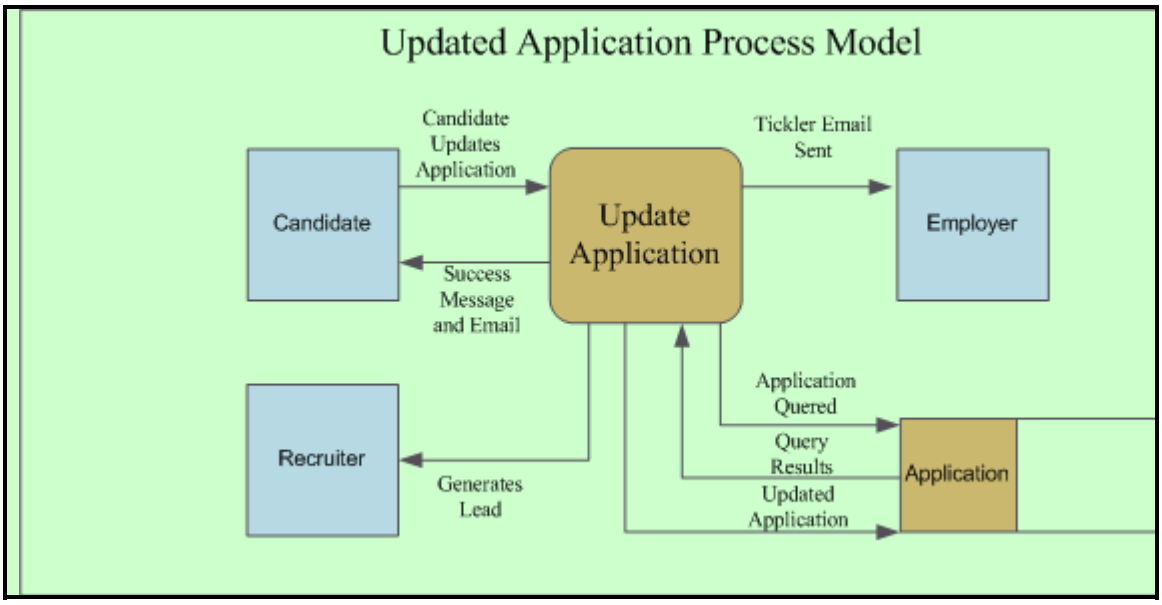
Candidate Subsystem

USE CASE NAME:	Review Application	**USE CASE TYPE**
PRIORITY:	High	
SOURCE:	System Requirement	System Analysis
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a Reservist reviews all active applications.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The Use Case is initiated when the candidate clicks on "Review Applications"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate initiates a search for all active applications submitted to RBAS.	**Step 2**: The system generates search request form allowing the candidate to specify the criteria for the search to filter on.
	Step 3: The candidate completes the search form and clicks submit.	**Step 4**: The system queries the database using the criteria submitted.
		Step 5: The system displays the results of the query for the candidate's review.
ALTERNATE COURSES:	**SR Step 4:** The system rejects the search request due to incomplete or improper information.	
	SR Step 4: The system prompts the candidate to reenter or correct the data.	
	AA Step 3: The candidate reenters or corrects the data and resubmits and the process continues at Step #3 of "typical course of events."	
CONCLUSION:	Candidate has successfully reviewed requested billet application.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



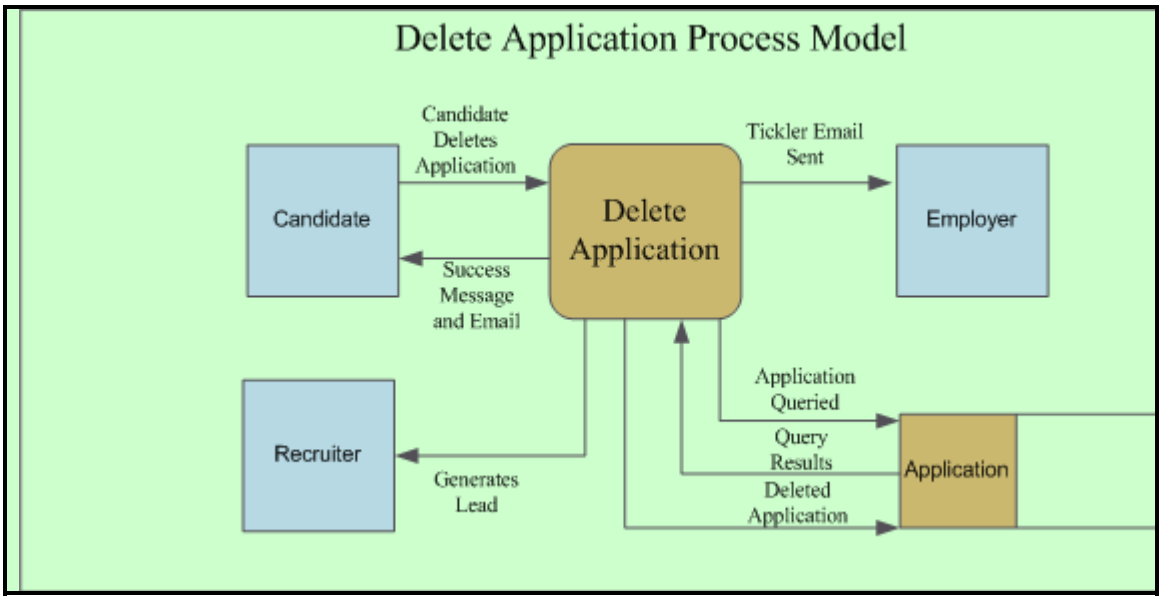
Candidate Subsystem

USE CASE NAME:	Update Application	**USE CASE TYPE**
PRIORITY:	High	
SOURCE:	System Requirement	System Analysis
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter	
DESCRIPTION:	This Use Case describes how a Reservist updates a current application that was submitted.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access. The candidate currently has at least one active application.	
TRIGGER:	The candidate selects an application to update from their queue.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects an application to update from their queue by clicking on the hyperlink or the update button associated with that application.	**Step 2**: The system checks the status of the application that the candidate desires to update.
		Step 3: If the application has not been selected or being processed and the information is not personal information housed in MCTFS, the system will honor the update request of the candidate.
		Step 4: The system generates an email to the candidate that acknowledges the success of the update operation.
		Step 5: A tickler email is sent to the Employer and Recruiter notifying them of the change.
ALTERNATE COURSES:	**Step 3**: If the update requested is personal information the candidate will be directed to services provided by Marine OnLine (MOL) to complete the transaction.	
CONCLUSION:	The application is successfully updated the information that required changes.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES	1. Application can be updated as long as the application is in the pre-approval status. 2. The candidate cannot update personal information without going through the appropriate channels.	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Updated Application Process Model
Candidate
Candidate Updates Application
Success Message and Email
Update Application
Tickler Email Sent
Employer
Recruiter
Generates Lead
Application Quered
Query Results
Updated Application
Application

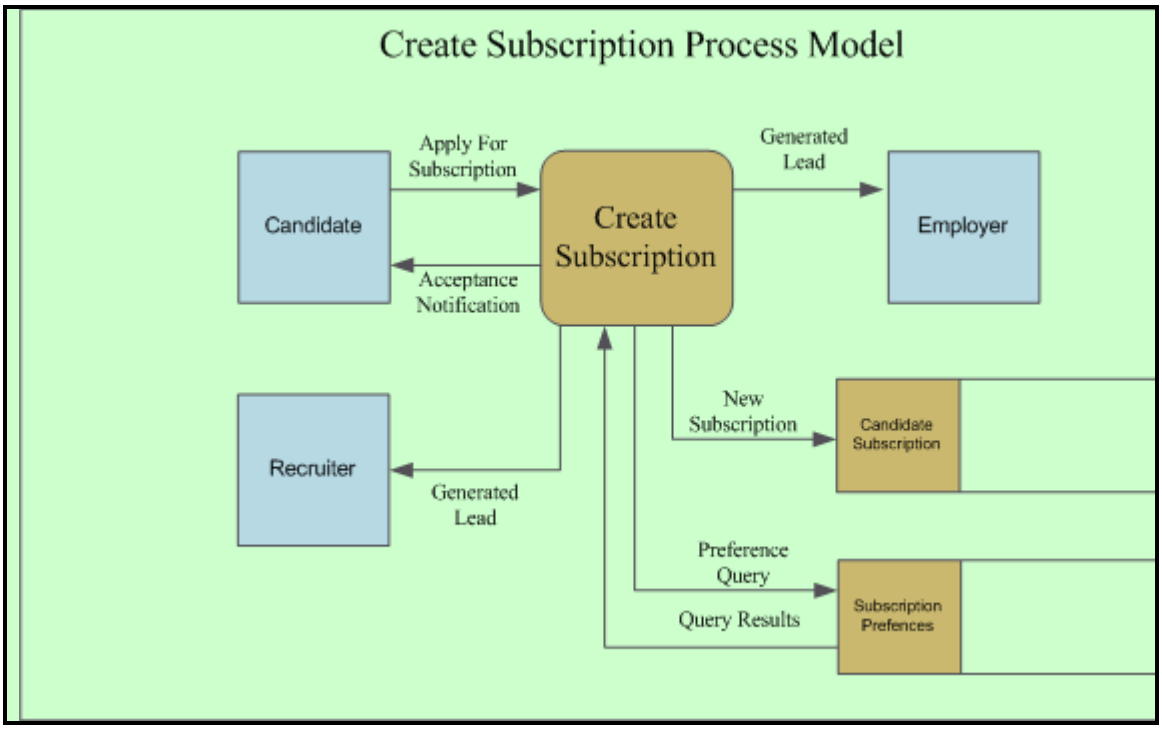
Candidate Subsystem

USE CASE NAME:	Delete Application	**USE CASE TYPE**
PRIORITY:	High	
SOURCE:	System Requirement	System Analysis
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter	
DESCRIPTION:	This Use Case describes how a Reservist deletes an application that has been previously submitted.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access. The candidate currently has at least one active application.	
TRIGGER:	The candidate selects an application that they want to delete.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects an application to delete from their queue by clicking on the hyper link or the delete button associated with that application.	**Step 2**: The system checks the status of the application that the candidate wishes to delete.
		Step 3: If the application has not been selected and being processed, the system will honor the delete request of the candidate.
		Step 4: The employer's application queue for this advertisement is updated.
		Step 5: The candidate's active application queue is updated.
		Step 5: A tickler email is sent to the Employer notifying them of the deletion.
		Step 6: The system generates an email to the candidate that acknowledges the success of the delete operation.
		Step 7: A tickler email is sent to the Employer and Recruiter notifying them of the deletion.
ALTERNATE COURSES:	**Step 3**: If the application has been selected and being processed therefore the system will NOT honor the delete request of the candidate.	
CONCLUSION:	The application is deleted and the candidate's active application queue is updated.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES	Application can be updated as long as the application is in the pre-approval status. The candidate cannot update personal information without going through the appropriate channels.	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Delete Application Process Model
Candidate
Candidate Deletes Application
Success Message and Email
Delete Application
Tickler Email Sent
Employer
Recruiter
Generates Lead
Application Queried
Query Results
Deleted Application
Application

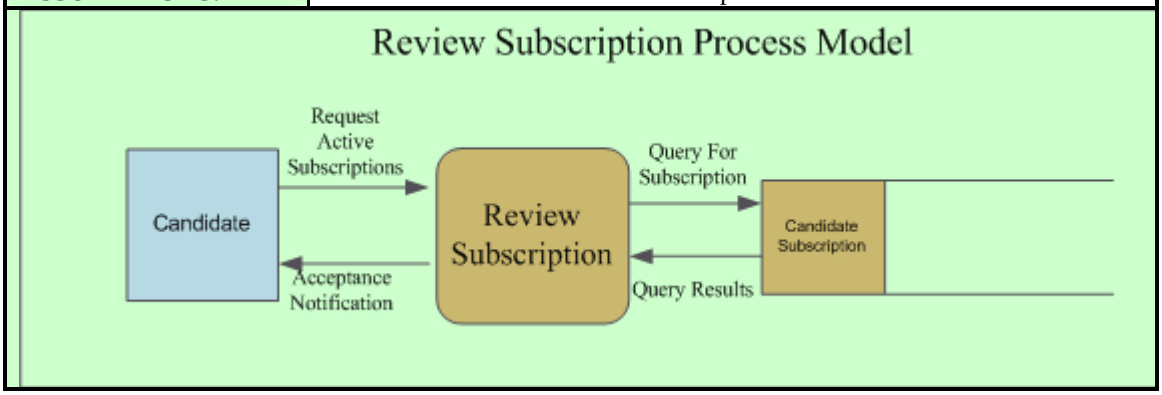
Candidate Subsystem

USE CASE NAME:	Create Billet Lead Subscription	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter	
DESCRIPTION:	This Use Case describes how a Candidate can create a subscription to receive updates (email or notification on portal) if new billets that fit his or her criteria (geo loc, dates) have been posted, updated or deleted.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The candidate wants to create a subscription service within RBAS.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Candidate with roles clicks "Create Subscription"	**Step 2**: Screen with subscription criteria (MOS, GeoLoc, Dates) appears for candidate to select or input.
	Step 3: Candidate completes form and clicks submit.	**Step 4**: The system verifies the information.
		Step 5: If the information is correct, the system accepts the subscription.
		Step 6: The system places the employer and their search criteria in its subscription queue.
		Step 7: Leads are generated for employers and recruiters that have subscribed to candidate search services.
		Step 8: The system compares the criteria of newly posted, updated or deleted billets versus the criteria posted by subscribers.
ALTERNATE COURSES:	**SR Step 2:** The system rejects the application because of incomplete or improper data.	
	AA Step 3: The user corrects the data, resubmits and reenters the process at step #2 of the "typical course of events."	
CONCLUSION:	Candidate has successfully created a subscription service to receive leads automatically.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Create Subscription Process Model
Candidate
Apply For Subscription
Acceptance Notification
Create Subscription
Generated Lead
Employer
Recruiter
Generated Lead
New Subscription
Candidate Subscription
Preference Query
Query Results
Subscription Prefences

Candidate Subsystem

USE CASE NAME:	Review Billet Lead Subscription	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a Candidate can review all active subscriptions.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access. The candidate has active subscription(s).	
TRIGGER:	The candidate chooses to review an active subscription in the RBAS subscription portal.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "view" subscription from menu of choices.	**Step 2**: The system will query the database to retrieve the candidate's subscription information.
		Step 3: Once an active record is found, the system will display the retrieved subscription information.
ALTERNATE COURSES:	**SR Step 3:** The system is unable to locate a subscription for the candidate.	
	SR Step 4: The system displays an error message that informs the candidate that he or she has no active subscriptions.	
CONCLUSION:	Candidate successfully reviews active subscriptions.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	

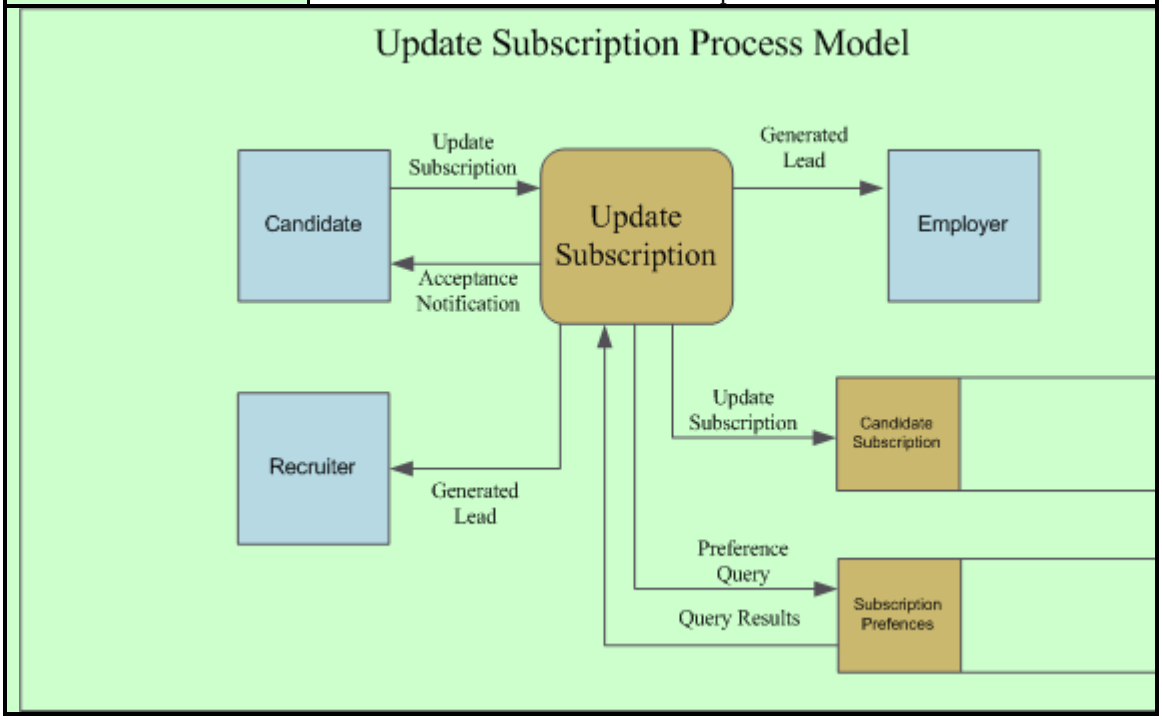


Candidate Subsystem

USE CASE NAME:	Update Billet Lead Subscription	**USE CASE TYPE**
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	System Analysis
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter	
DESCRIPTION:	This Use Case describes how a Candidate can update an active subscription.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access. The candidate has active subscription(s).	
TRIGGER:	The candidate chooses to update an active subscription in the RBAS subscription portal.	

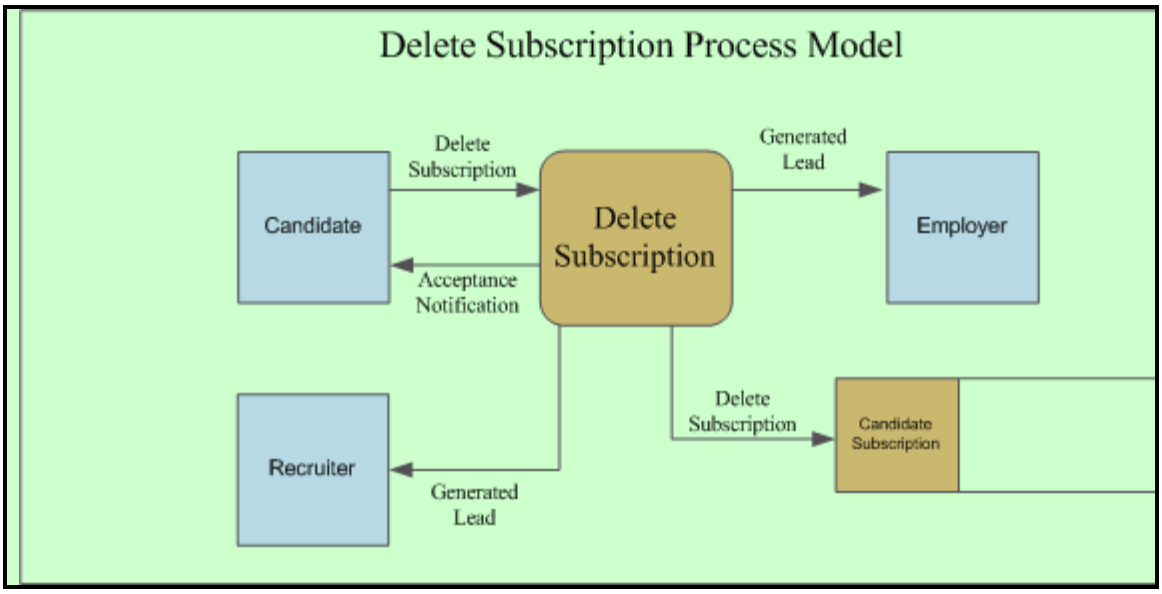
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "update" subscription from menu of choices.	**Step 2**: The system will query the database to retrieve the candidate's subscription information.
		Step 3: Once an active record is found, the system will prompt candidate to verify if the information retrieved is the subscription they want to update.
	Step 4: The candidate verifies the information and acknowledges by pressing continue.	**Step 5:** The system then opens a subscription edit window and populates the fields with the retrieved information and prompts the user to update the subscription.
	Step 6: The candidate updates the information and hits "submit" when complete.	**Step 7:** The system error checks the information, if the information is correct the update is accepted, acknowledged and the database is updated.
		Step 8: The system places the candidate and their search criteria in its subscription queue.
		Step 9: Leads are generated for employers and recruiters that have subscribed to candidate search services.
		Step 10: The system compares the billet identifiers of newly posted, updated or deleted jobs versus the criteria posted by subscribers.
		Step 11: If the search criteria matches, an email is generated and sent to the candidate or his portal is updated. (which ever method is selected)

ALTERNATE COURSES:	**SR Step 3:** The system is unable to locate a subscription for the candidate.
	SR Step 4: The system displays an error message that informs the candidate that he or she has no active subscriptions.
	AA Step 6: The candidate declines to update the subscription.
	SR Step 7: The system acknowledges the negative response and deletes the transaction.
	SR Step 8: The system display successful cancelation message to user.
CONCLUSION:	The candidate updates an active subscription.
POST-CONDITION:	User is returned to portal homepage.
BUSINESS RULES	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS	
ASSUMPTIONS:	User must have access to NMCI compliant web browser.



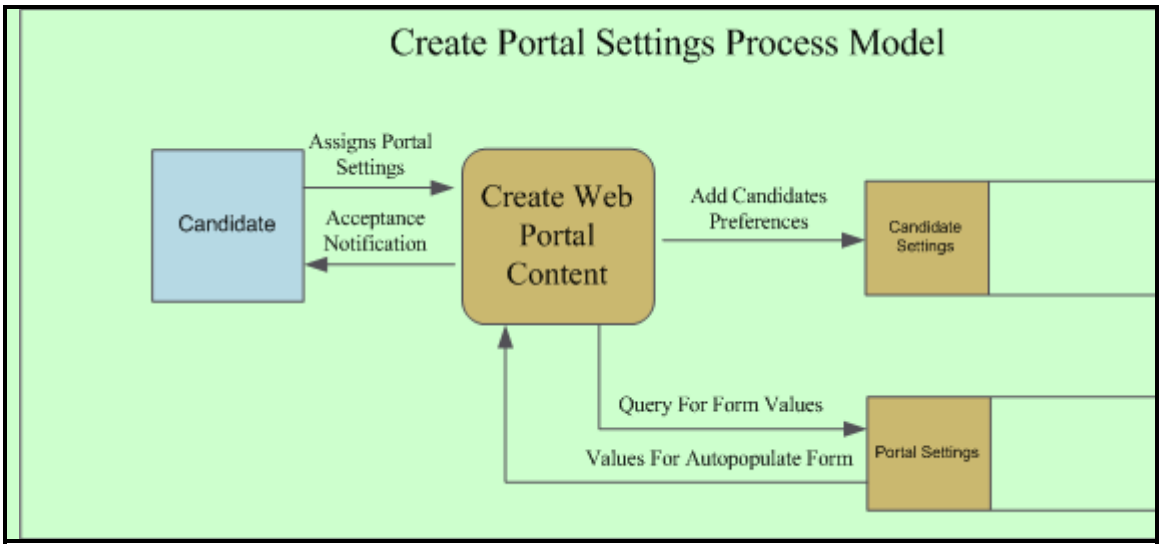
Candidate Subsystem

USE CASE NAME:	Delete Billet Lead Subscription	**USE CASE TYPE**
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	System Analysis
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter	
DESCRIPTION:	This Use Case describes how a Candidate can delete an active subscription.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access. The candidate has active subscriptions.	
TRIGGER:	The candidate chooses to delete an active subscription in the RBAS subscription portal.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "delete" subscription from menu of choices.	**Step 2**: The system will query the database to retrieve the candidate's subscription information.
		Step 3: Once an active record is found, the system will prompt candidate to verify if the information retrieved is the subscription they want deleted.
	Step 4: The candidate verifies the information and acknowledges by pressing continue.	**Step 5:** The system then prompts the candidate if they are certain they want to cancel this subscription.
	Step 6: The candidate acknowledges his or her approval by clicking "yes"	**Step 7:** The system receives the response and deletes the subscription from the database
		Step 8: A success message is generated and displayed to the candidate.
ALTERNATE COURSES:	**SR Step 3:** The system is unable to locate a subscription for the candidate.	
	SR Step 4: The system displays an error message that informs the candidate that he or she has no active subscriptions.	
	AA Step 6: The candidate declines to delete subscription.	
	SR Step 7: The system acknowledges the negative response and deletes the transaction.	
	SR Step 8: The system display successful cancelation message to user.	
CONCLUSION:	The candidate deletes an active subscription.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Delete Subscription Process Model
Candidate
Delete Subscription
Acceptance Notification
Delete Subscription
Generated Lead
Employer
Recruiter
Generated Lead
Delete Subscription
Candidate Subscription

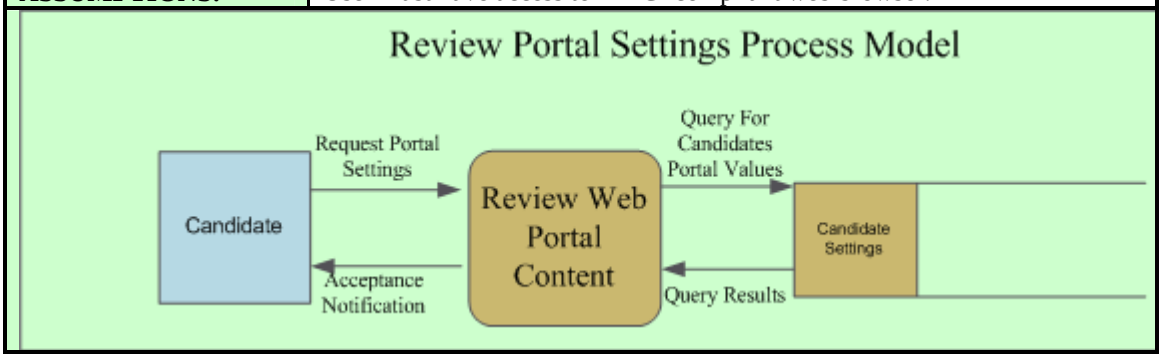
Candidate Subsystem

USE CASE NAME:	Create personal web portal content		**USE CASE TYPE** System Analysis
PRIORITY:	Medium		
SOURCE:	Requirements Analysis		
PRIMARY BUSINESS ACTOR	Candidate		
PRIMARY SYSTEM ACTOR			
OTHER PARTICIPATING ACTORS:			
DESCRIPTION:	This use case describes how a candidate can create a personalized web portal upon initial login to the Reserve Billet Advertisement System.		
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.		
TRIGGER:	The candidate subscribes to service via RBAS.		
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**	
	Step 1: The candidate logons to RBAS for the first time.	**Step 2**: The system prompts the user to select what content they want to add to their personal portal. The user will be provided with a list of alternatives to select from.	
	Step 3: The candidate selects the services that he or she wants to populate their personal portal with. When the candidate is done choosing, he or she hits "submit" to transmit settings back to RBAS.	**Step 4:** RBAS acknowledges the request, and updates the candidate's preferences queue and updates the database.	
		Step 5: The system sends a positive response acknowledging changes and instructs user to log off and on to view the changes.	
ALTERNATE COURSES:	None		
CONCLUSION:	The candidate personalizes their web portal.		
POST-CONDITION:	User is returned to portal homepage.		
BUSINESS RULES			
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS			
ASSUMPTIONS:	User must have access to NMCI compliant web browser.		


Create Portal Settings Process Model
Candidate
Assigns Portal Settings
Acceptance Notification
Create Web Portal Content
Add Candidates Preferences
Candidate Settings
Query For Form Values
Values For Autopopulate Form
Portal Settings

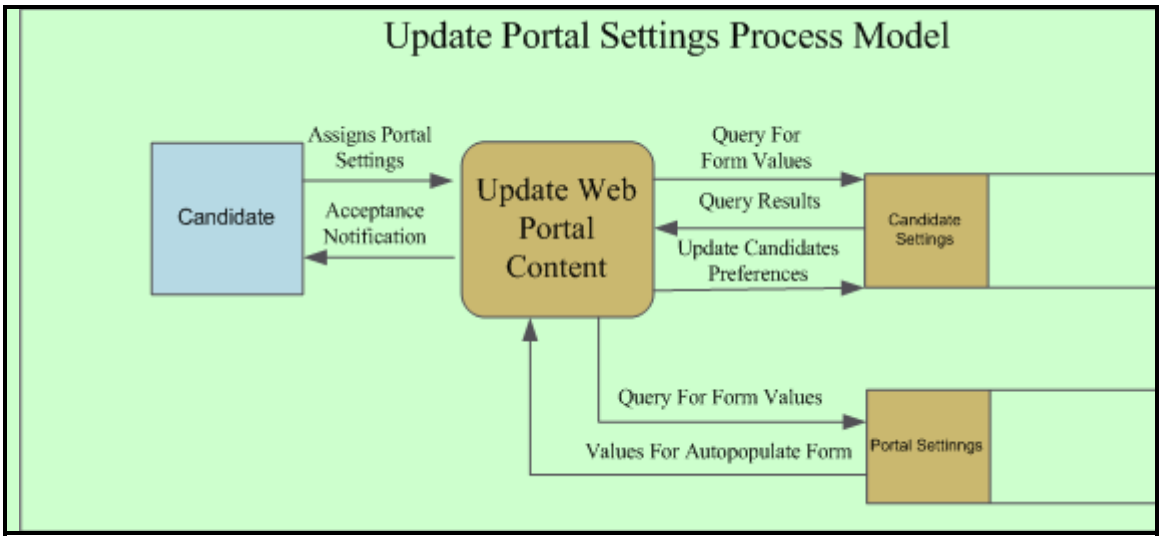
Candidate Subsystem

USE CASE NAME:	Review personal web portal content	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how a candidate can review settings for their personalized web portal in Reserve Billet Advertisement System.	
PRE-CONDITION:	The candidate is registered Reserve Billet Advertisement System and have been assigned the appropriate level of access. The candidate is logged into RBAS.	
TRIGGER:	The candidate reviews personal setting for personal portal in RBAS.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "view" portal settings from menu of choices.	**Step 2**: The system queries the database for the candidate's currents settings.
		Step 3: If the candidate has personal settings, RBAS displays the queries results.
ALTERNATE COURSES:	**SR** Step 3: The candidate doesn't have any portal settings and the system displays an error message.	
CONCLUSION:	The candidate reviews their personal web portal settings.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



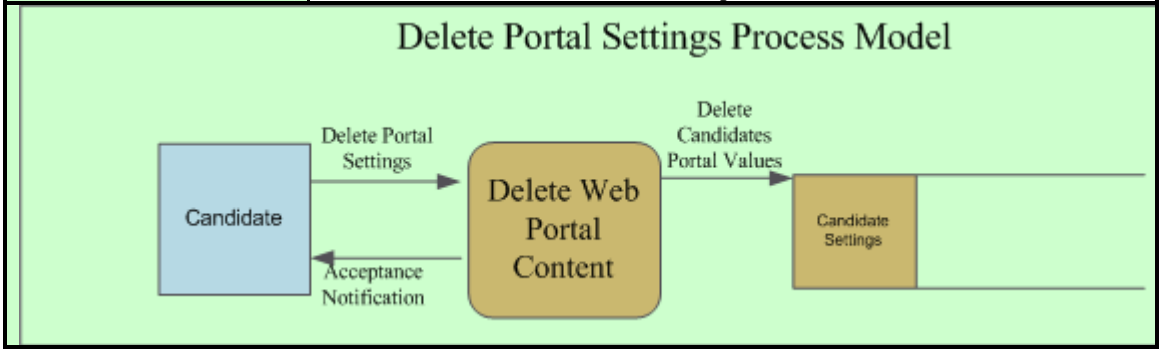
Candidate Subsystem

USE CASE NAME:	Update personal web portal content	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how a candidate can update their personalized web portal in the Reserve Billet Advertisement System.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access. The candidate is logged into RBAS.	
TRIGGER:	The candidate chooses to update their personal web portal content in RBAS.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "update" portal settings from menu of choices.	**Step 2**: The system queries the database, populates the list of alternatives with current settings.
		Step 3: The system prompts the candidate to update their selections.
	Step 3: The candidate selects the services that he or she wants to populate their personal portal with. When the candidate is done modifying their settings he or she hits "submit" to transmit settings back to RBAS.	**Step 4:** RBAS acknowledges the request, and updates the member's preferences queue and updates the database.
		Step 5: The system sends a positive response acknowledging the changes and instructs user to log off and on to view the changes.
ALTERNATE COURSES:	**SR Step 2:** The system is query results are negative.	
	SR Step 3: The system presents and error message informing the candidate and asks the user if they would like to personalize their portal.	
	AA Step 4: If the candidate provides a positive acknowledgement they proceed to step 2 of the Create Personal Portal Content. If not, the transaction is cancelled.	
CONCLUSION:	The candidate updates their settings for their personalized web portal.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Update Portal Settings Process Model
Candidate
Assigns Portal Settings
Acceptance Notification
Update Web Portal Content
Query For Form Values
Query Results
Update Candidates Preferences
Candidate Settings
Query For Form Values
Values For Autopopulate Form
Portal Settinngs

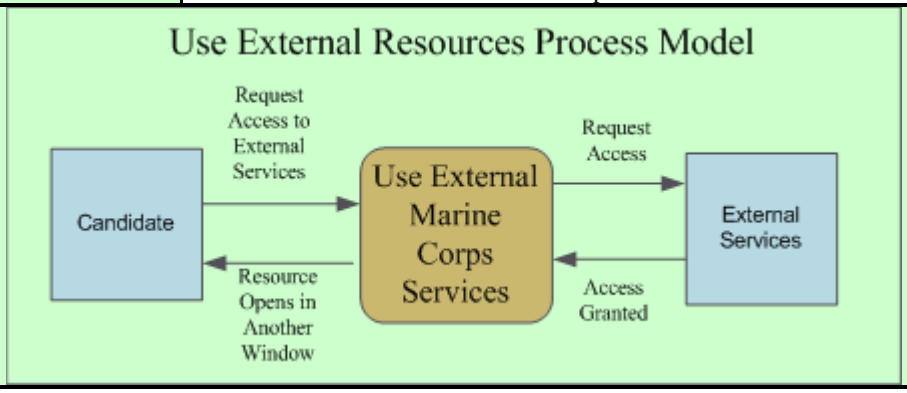
Candidate Subsystem

USE CASE NAME:	Delete personal web portal content	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how a candidate can delete settings for their personalized web portal in Reserve Billet Advertisement System.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The candidate chooses to delete their personal web portal settings.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "delete" portal settings from menu of choices.	**Step 2**: The system queries the database for the candidate's currents settings.
		Step 3: If the candidate has personal settings, RBAS displays the query results and prompts the user to verify that they want to delete these settings.
	Step 4: The candidate acknowledges the system prompt.	**Step 5:** The system deletes the user's personal settings and restores the system's default settings.
ALTERNATE COURSES:	**SR Step 3**: The candidate doesn't have any portal settings and the system displays an error message and transaction is canceled.	
CONCLUSION:	The candidate deletes personal web portal settings.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



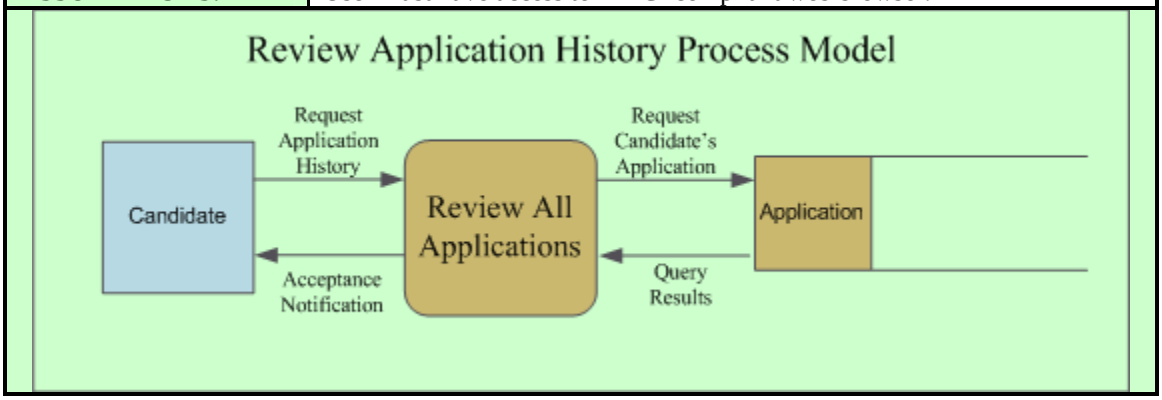
Candidate Subsystem

USE CASE NAME:	Use External Marine Corps Services	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a Candidate can use external links to manage their career.	
PRE-CONDITION:	Candidate has successfully logged onto RBAS.	
TRIGGER:	Candidate clicks on an external link.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Candidate actuates an external link.	**Step 2**: System opens another display window.
		Step 3: System opens requested resource.
ALTERNATE COURSES:	**Step 3**: System reports error if link is not operational.	
CONCLUSION:	Candidate has successfully navigated to desired external site.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



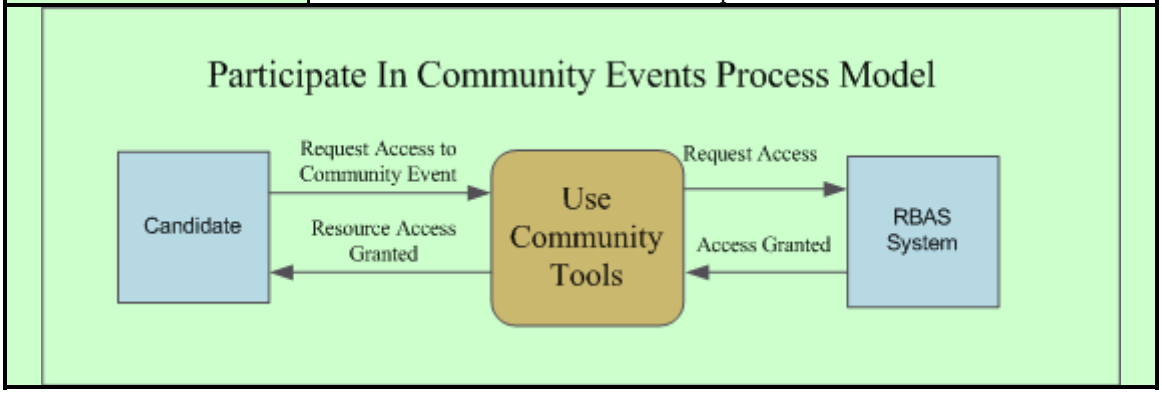
Candidate Subsystem

USE CASE NAME:	Review Application History	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how a Candidate can review all applications submitted via RBAS.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access. The candidate has applied for vacant billet(s).	
TRIGGER:	The candidate reviews application history in RBAS.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "view" previous applications from menu of choices.	**Step 2**: The system will query the database to retrieve the candidate's previous applications.
		Step 3: The system will display the Candidate's application history.
ALTERNATE COURSES:	**SR Step 3:** The system query returns with a negative response.	
	SR Step 4: The system displays an error message that informs the candidate that he or she has no previous applications on file.	
CONCLUSION:	The candidate views all previous applications submitted.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



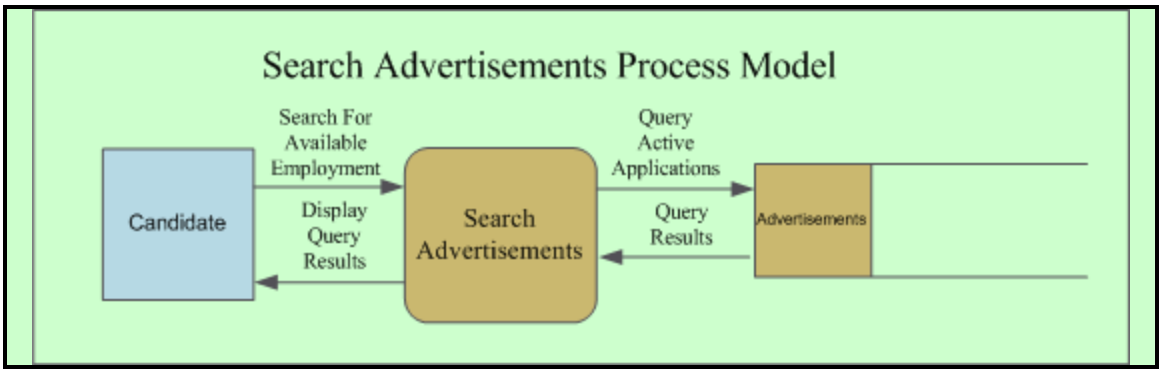
Candidate Subsystem

USE CASE NAME:	Participate in community events	**USE CASE TYPE** System Analysis
PRIORITY:	Low	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter	
DESCRIPTION:	This Use Case describes how a Candidate can use the community tools available in the RBAS system.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	Candidate clicks on community tool of choice.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Candidate actuates a community tool of choice from the Candidate Menu.	**Step 2**: System opens another display window.
		Step 3: System opens requested resource.
ALTERNATE COURSES:		
CONCLUSION:	When reservist has successfully navigated to desired community resource.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



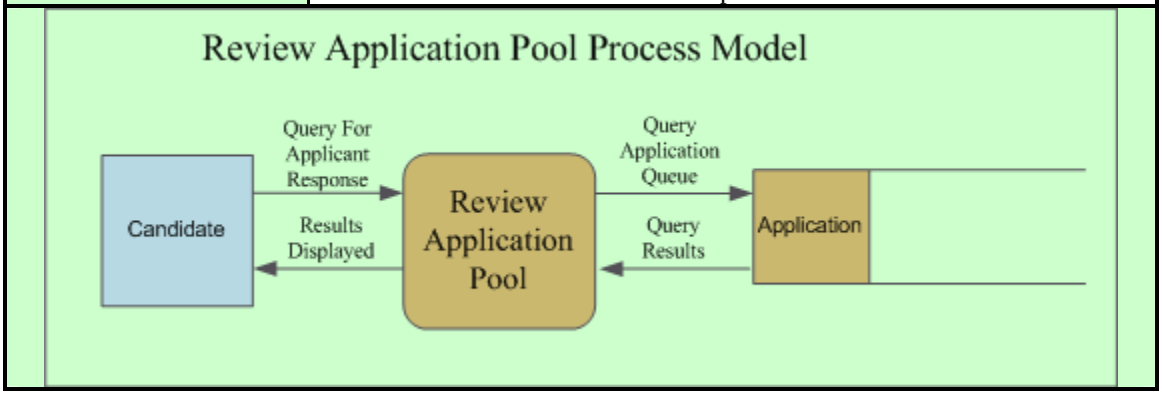
Candidate Subsystem

USE CASE NAME:	Search Available Advertisements	**USE CASE TYPE** System Analysis
PRIORITY:	High	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employers	
DESCRIPTION:	This Use Case describes how a Candidate can search for jobs posted by Employers that match their search criteria.	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	Candidate conducts a search of billets.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Candidate enters search criteria into query form and clicks "submit".	**Step 2**: System verifies the data entered into search form.
		Step 3: If the information is complete, the system accepts the request and conducts the search.
		Step 4: System displays matching billet information to the candidate.
ALTERNATE COURSES:	**SR Step 3**: System displays an error screen if no billets match and prompts user to correct	
	AA Step 4: Candidate reenters data, resubmits and the process begins at step #2 of "typical course of events."	
	OR	
	SR Step 3: System displays an error screen if information is incomplete and prompts user to correct and reenter data.	
	AA Step 4: Candidate reenters data, resubmits and the process begins at step #2 of "typical course of events."	
CONCLUSION:	The candidate is presented with the results of his or her query.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Search Advertisements Process Model
Search For Available Employment
Display Query Results
Candidate
Search Advertisements
Query Active Applications
Query Results
Advertisements

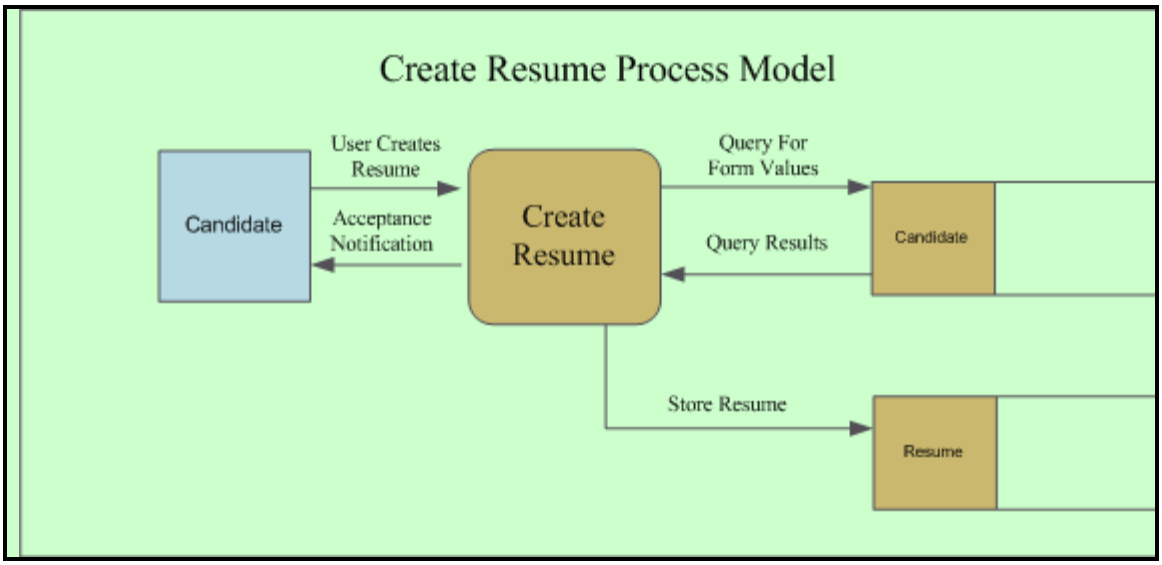
Candidate Subsystem

USE CASE NAME:	View applicant pool for an active advertisement	**USE CASE TYPE**
PRIORITY:	Medium	System Analysis
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how a candidate can view the current details of an active advertisement with respect to other candidates that have applied for a billet.	
PRE-CONDITION:	The candidate is registered Reserve Billet Advertisement System and have been assigned the appropriate level of access.	
TRIGGER:	The candidate clicks on an active advertisement and views the number and qualifications of applicants for that particular billet.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "applicants" from an active advertisement.	**Step 2**: The system will query the database to retrieve the applicant queue for the selected advertisement.
		Step 3: The system will display all activity associated with that particular advertisement.
ALTERNATE COURSES:		
CONCLUSION:	The candidate views activity associated with an advertisement.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



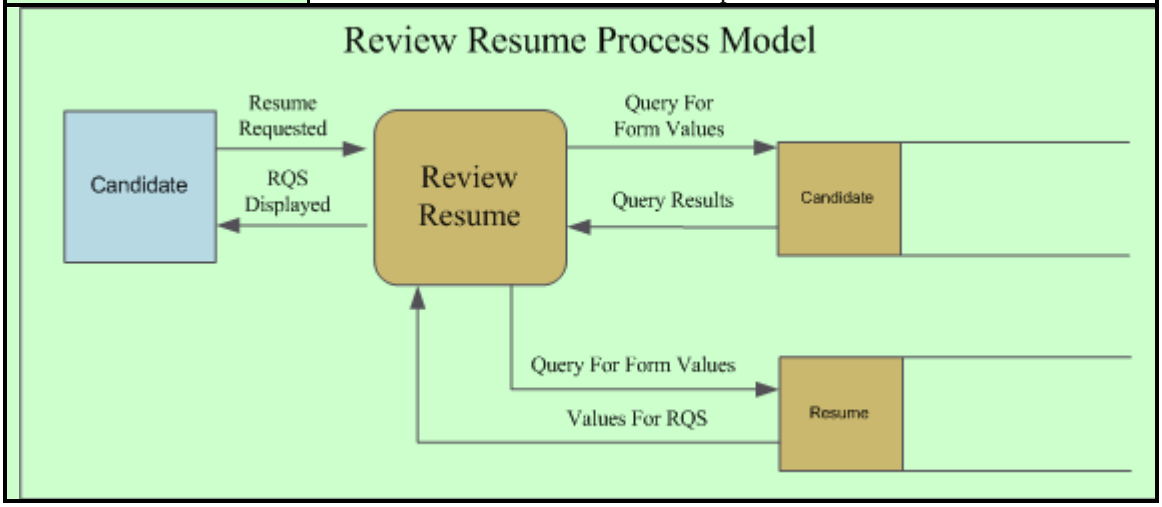
Candidate Subsystem

USE CASE NAME:	Create Reserve Qualification Summary	**USE CASE TYPE** System Analysis
PRIORITY:	High	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter	
DESCRIPTION:	This use case describes how a candidate can create an electronic Reserve Qualification Summary (RQS).	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The candidate clicks on "Create RQS".	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "Create RQS" from main menu.	**Step 2**: The system displays RQS with data populated from RBAS.
	Step 3: The candidate will input his or her information into the free form text blocks and click "submit" when finished.	**Step 4**: If data is input correctly, the system accepts the RQS and stores it.
	Step 5: The candidate receives confirmation that RQS has successfully been created.	**Step 6**: The system generates leads for Employers and Recruiters that have subscribed to automated candidate search services.
		Step 7: The system generates an email for the candidate acknowledging the systems acceptance of their RQS.
ALTERNATE COURSES:		
CONCLUSION:	The candidate successfully creates a RQS.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES	The candidate will not be able to update any personal information directly, with the exception of resume remarks on RQS.	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Create Resume Process Model
Candidate
User Creates Resume
Acceptance Notification
Create Resume
Query For Form Values
Query Results
Candidate
Store Resume
Resume

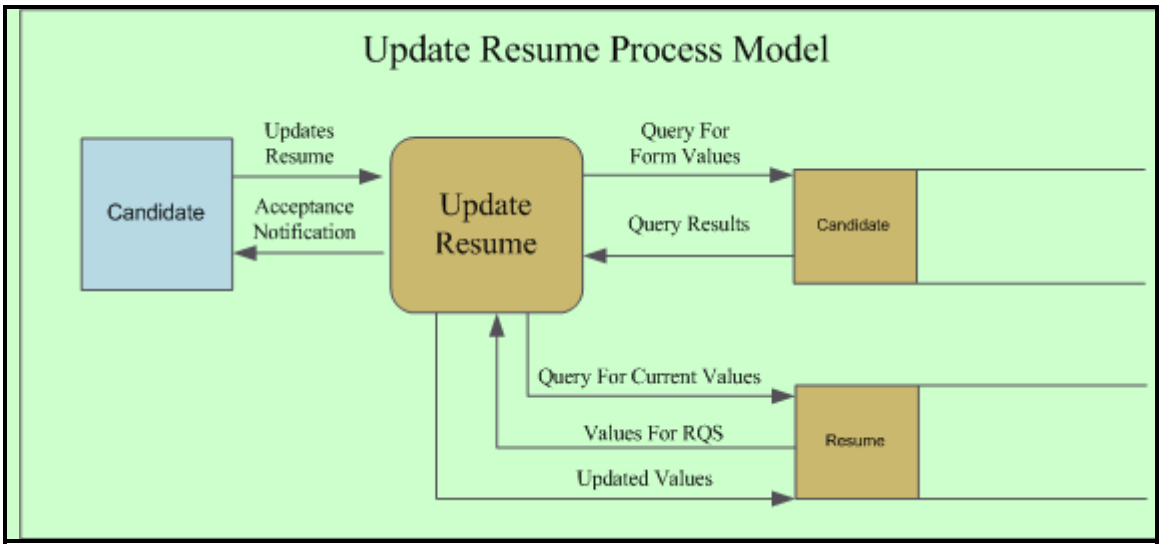
Candidate Subsystem

USE CASE NAME:	Review Reserve Qualification Summary	**USE CASE TYPE**
PRIORITY:	High	System Analysis
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how a candidate can review their electronic Reserve Qualification Summary (RQS).	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The candidate clicks on "Review RQS".	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "Review RQS" from main menu.	**Step 2**: The system displays the candidate's RQS with data populated from RBAS.
	Step 3: The candidate reviews the RQS.	
ALTERNATE COURSES:		
CONCLUSION:	The candidate successfully reviews their RQS.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



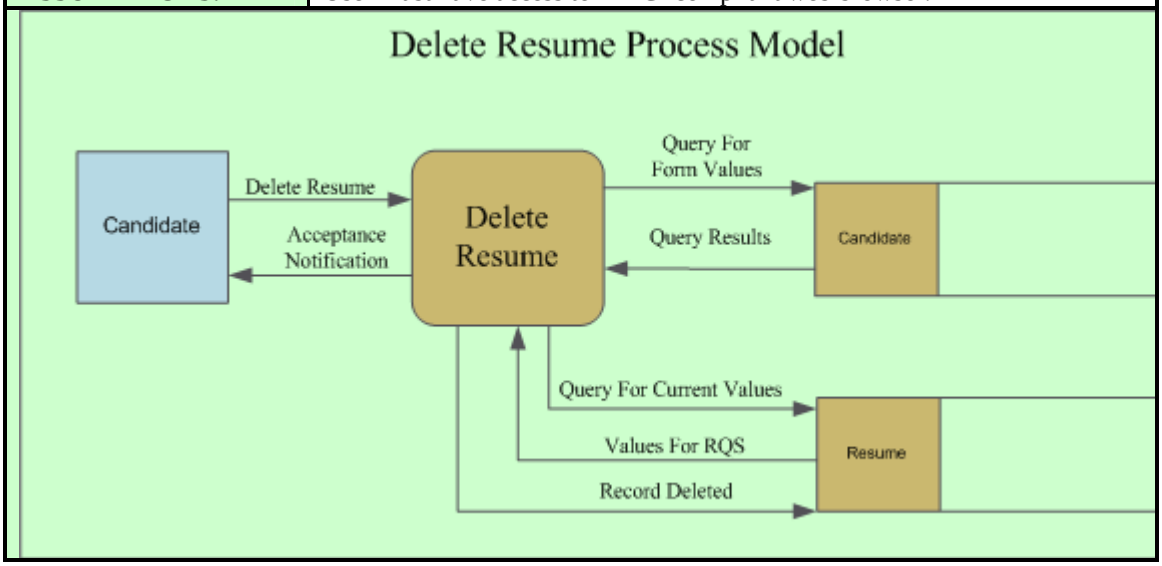
Candidate Subsystem

USE CASE NAME:	Update Reserve Qualification Summary	**USE CASE TYPE**
PRIORITY:	High	System Analysis
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter	
DESCRIPTION:	This use case describes how a candidate can update an electronic Reserve Qualification Summary (RQS).	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The candidate clicks on "Update RQS".	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "Update RQS" from main menu.	**Step 2**: The system displays the candidate's RQS with data populated from RBAS.
	Step 3: The candidate will update his or her information in the free form text blocks and click "submit" when finished.	**Step 4**: If data is input correctly, the system accepts the updated RQS information and stores it.
	Step 5: The candidate receives confirmation that their RQS has successfully been updated.	**Step 6**: The system generates leads for Employers and Recruiters that have subscribed to automated candidate search services.
		Step 7: The system generates an email for the candidate acknowledging the RQS update.
ALTERNATE COURSES:		
CONCLUSION:	The candidate successfully updates their RQS.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES	The candidate will not be able to update any personal information directly, with the exception of resume remarks on RQS.	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Update Resume Process Model
Candidate
Updates Resume
Acceptance Notification
Update Resume
Query For Form Values
Query Results
Candidate
Query For Current Values
Values For RQS
Updated Values
Resume

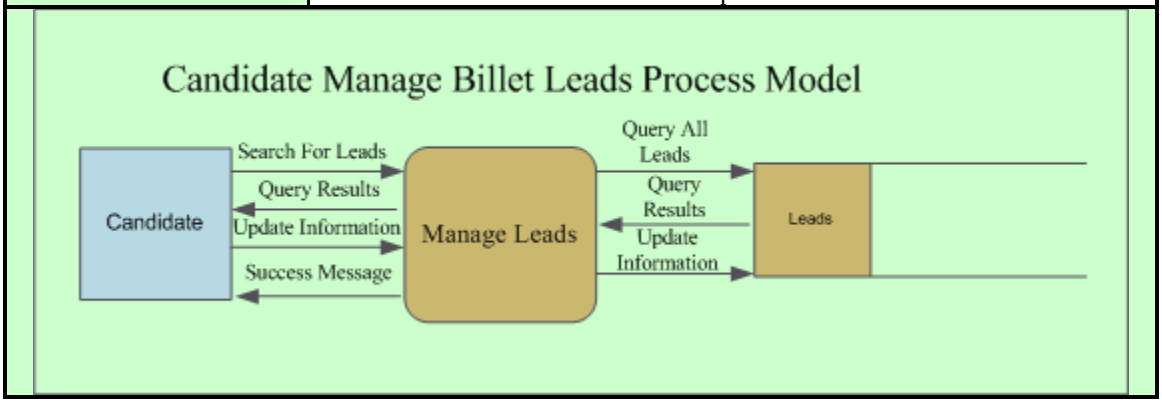
Candidate Subsystem

USE CASE NAME:	Delete Reserve Qualification Summary	**USE CASE TYPE** System Analysis
PRIORITY:	High	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Candidate	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter	
DESCRIPTION:	This use case describes how a candidate can delete their electronic Reserve Qualification Summary (RQS).	
PRE-CONDITION:	The candidate is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The candidate clicks on "Delete RQS".	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The candidate selects "Delete RQS" from main menu.	**Step 2**: The system displays the candidate's RQS with data populated from RBAS.
	Step 3: The candidate clicks "Delete RQS".	**Step 4**: System prompts candidate "Are you sure you want to delete this RQS?"
	Step 5: Candidate selects "yes" or "no".	**Step 6**: If "yes" RQS information is deleted from RBAS.
ALTERNATE COURSES:		
CONCLUSION:	The candidate successfully deletes their RQS.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



Candidate Subsystem

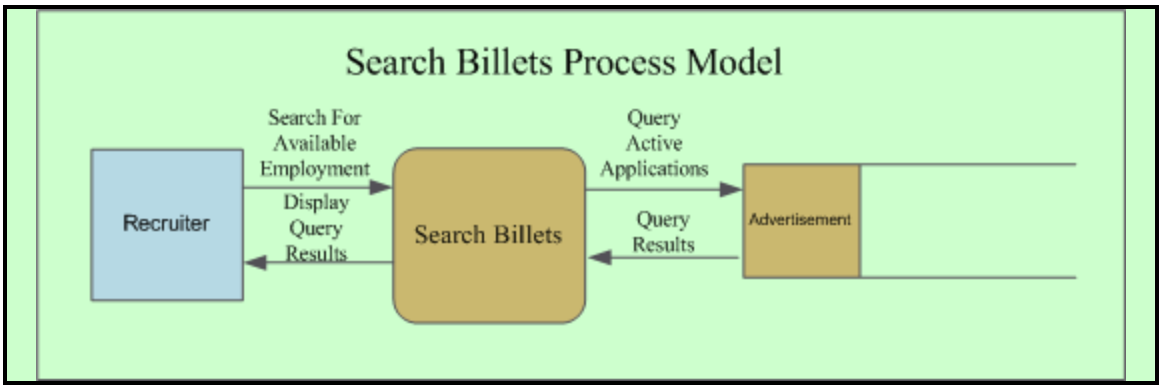
USE CASE NAME:	Manage Billet Leads	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Candidate	
OTHER PARTICIPATING ACTORS:	Employer	
OTHER INTERESTED STAKEHOLDERS:		
DESCRIPTION:	This Use Case describes how a Candidate can manage all leads that have been generated for advertisements that are included in their subscriptions.	
PRE-CONDITION:	You must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when a candidate with roles clicks “Manage Leads”	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Candidate with roles clicks “Manage Leads”	**Step 2**: Screen with listing of all current leads appears for the candidate to select which one to manage.
	Step 3: Candidate clicks on appropriate lead to obtain all its details.	**Step 4**: System displays all details of specific lead.
	Step 5: Candidate is given the option to update/delete the lead or return to the Leads menu.	
ALTERNATE COURSES:		
CONCLUSION:	This use case concludes when the candidate is successfully able to manage advertisement leads.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



APPENDIX C. RECRUITER USE CASES

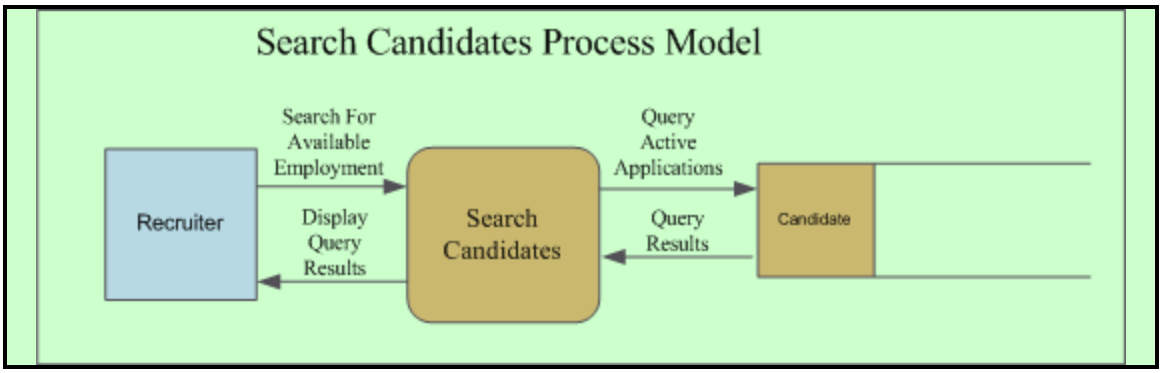
Recruiter Subsystem

USE CASE NAME:	Search all available billets	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Recruiter	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer	
DESCRIPTION:	This Use Case describes how a recruiter can search for billets that match their search criteria (MOS, GeoLoc, Dates).	
PRE-CONDITION:	The PSR is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	PSR conducts a search of billets.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: PSR enters search criteria into query form and clicks "submit".	**Step 2**: System verifies the data entered into search form.
		Step 3: If the information is complete, the system accepts the request and conducts the search.
		Step 4: System displays matching billets to the PSR.
ALTERNATE COURSES:	**SR Step 3**: System displays an error screen if no billets match and prompts user to correct	
	AA Step 4: PSR reenters data, resubmits and the process begins at step #2 of "typical course of events."	
	OR	
	SR Step 3: System displays an error screen if information is incomplete and prompts user to correct and reenter data.	
	AA Step 4: PSR reenters data, resubmits and the process begins at step #2 of "typical course of events."	
CONCLUSION:	The PSR is presented with the results of his or her query.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Search Billets Process Model
Recruiter
Search For Available Employment
Display Query Results
Search Billets
Query Active Applications
Query Results
Advertisement

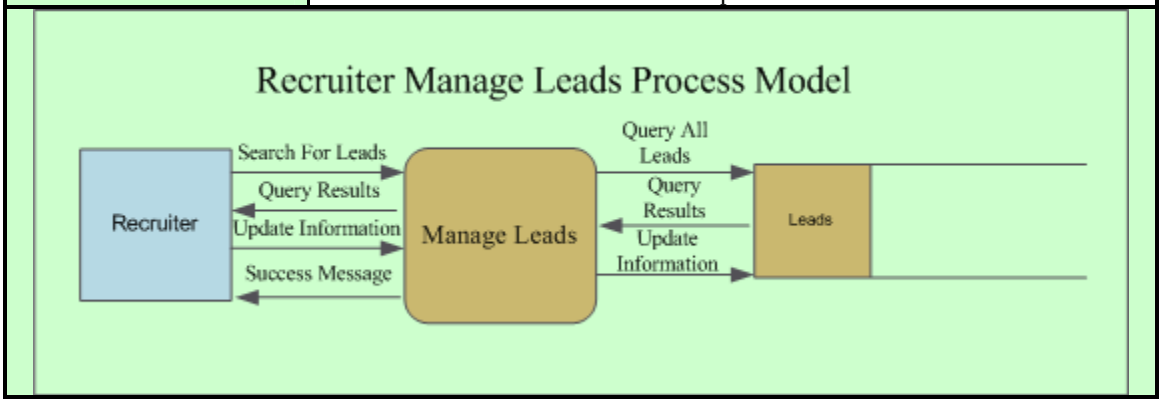
Recruiter Subsystem

USE CASE NAME:	Search all available candidates	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Recruiter	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Candidate	
DESCRIPTION:	This Use Case describes how a recruiter can search for candidates that match their search criteria (MOS, GeoLoc, Dates).	
PRE-CONDITION:	The recruiter is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	PSR conducts a search of candidates.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Recruiter enters search criteria into query form and clicks "submit".	**Step 2**: System verifies the data entered into search form.
		Step 3: If the information is complete, the system accepts the request and conducts the search.
		Step 4: System displays matching candidates to the recruiter.
ALTERNATE COURSES:	**SR Step 3**: System displays an error screen if no candidates match and prompts user to correct	
	AA Step 4: Recruiter reenters data, resubmits and the process begins at step #2 of "typical course of events."	
	OR	
	SR Step 3: System displays an error screen if information is incomplete and prompts user to correct and reenter data.	
	AA Step 4: PSR reenters data, resubmits and the process begins at step #2 of "typical course of events."	
CONCLUSION:	The PSR is presented with the results of his or her query.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Search Candidates Process Model
Recruiter
Search For Available Employment
Display Query Results
Search Candidates
Query Active Applications
Query Results
Candidate

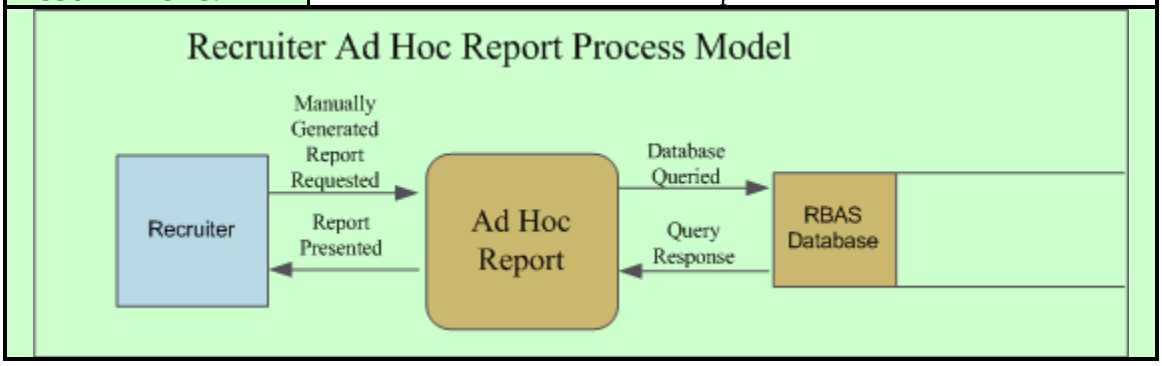
Recruiter Subsystem

USE CASE NAME:	Manage candidate leads	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Recruiter	
OTHER PARTICIPATING ACTORS:	Candidate	
OTHER INTERESTED STAKEHOLDERS:		
DESCRIPTION:	This Use Case describes how a Recruiter can manage all leads that have been generated for billets that are included in their district.	
PRE-CONDITION:	You must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when a recruiter with roles clicks “Manage Leads”	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Recruiter with roles clicks “Manage Leads”	**Step 2**: Screen with listing of all current leads appears for the recruiter to select which one to manage.
	Step 3: Recruiter clicks on appropriate lead to obtain all its details.	**Step 4**: System displays all details of specific lead.
	Step 5: Recruiter is given the option to update/delete the lead or return to the Leads menu.	
ALTERNATE COURSES:		
CONCLUSION:	This use case concludes when the recruiter is successfully able to manage candidate leads.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



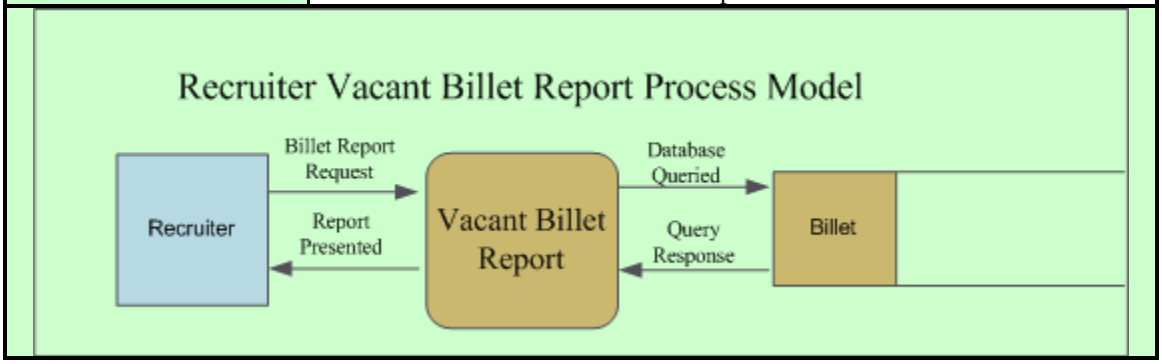
Recruiter Subsystem

USE CASE NAME:	View Ad Hoc Report	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Recruiter	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a Recruiter generates and views ad hoc reports.	
PRE-CONDITION:	The recruiter is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access	
TRIGGER:	Recruiter inputs query data into the report input form and hits submit.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The recruiter enters the requested dataset into the form and clicks the "submit" button.	**Step 2**: System verifies completeness of data entered into query.
		Step 3: If all required information is entered, the system performs the query.
		Step 4: System displays results to recruiter.
ALTERNATE COURSES:	**SR Step 3**: All the required information not present, error message sent to user.	
	AA Step 4: The recruiter corrects the error and resubmits.	
	SR Step 5: System verifies completeness of data entered into query.	
	SR Step 6: If all required information is entered, the system performs the query.	
	SR Step 7: System displays results to recruiter.	
CONCLUSION:	The recruiter is presented with report requested.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



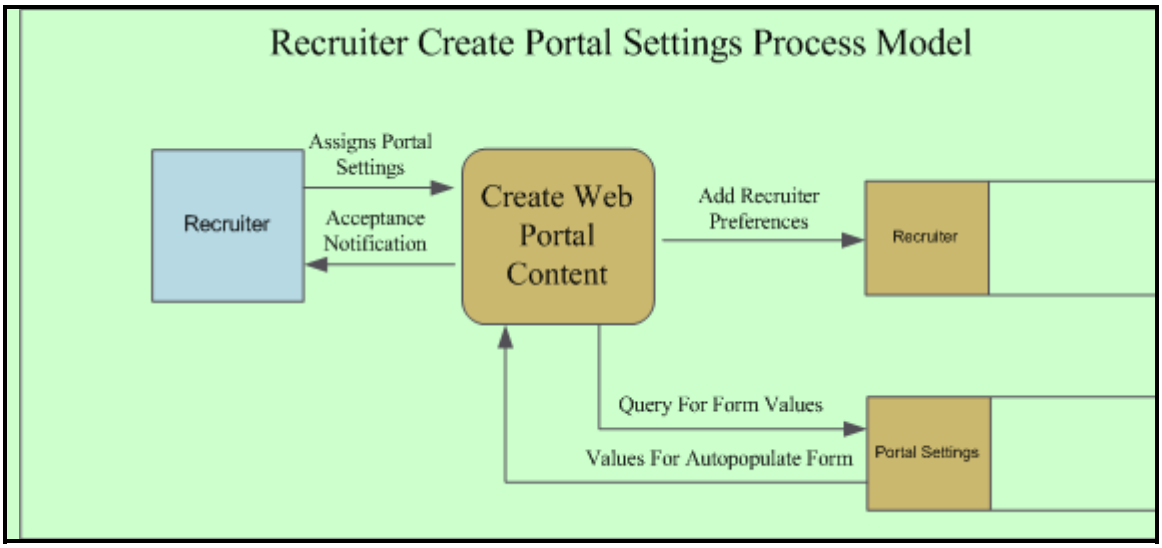
Recruiter Subsystem

USE CASE NAME:	View Vacant Billet Report	**USE CASE TYPE** System Analysis
PRIORITY:	Low	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Recruiter	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a Recruiter generates and views the vacant billet report.	
PRE-CONDITION:	The recruiter is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access	
TRIGGER:	Recruiter enters reports page and clicks on vacant billet report.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The recruiter enters the reports page and clicks on vacant billet report. (Recruiter will have option to filter results)	**Step 2**: System queries all current advertisements which are currently vacant.
		Step 3: System displays results to recruiter.
ALTERNATE COURSES:		
CONCLUSION:	The recruiter is presented with report requested.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



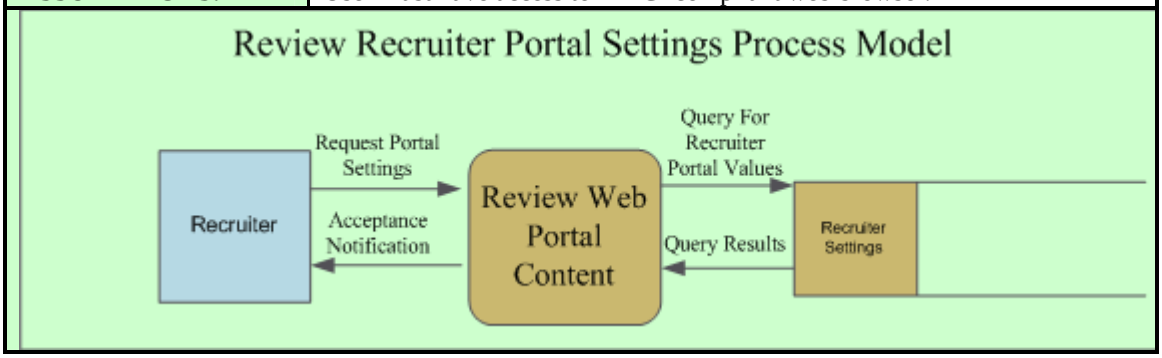
Recruiter Subsystem

USE CASE NAME:	Create Personal Web Portal Content	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Recruiter	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how a Recruiter can create a personalized web portal upon initial login to the Reserve Billet Advertisement System.	
PRE-CONDITION:	The recruiter is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The recruiter subscribes to service via RBAS.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The recruiter logs on to RBAS for the first time.	**Step 2**: The system prompts the recruiter to select what content they want to add to their personal portal. The user will be provided with a list of alternatives to select from.
	Step 3: The recruiter selects the services that he or she wants to populate their personal portal with. When the recruiter is done choosing, he or she hits "submit" to transmit settings back to RBAS.	**Step 4:** RBAS acknowledges the request, and updates the recruiter's preferences queue and updates the database.
		Step 5: The system sends a positive response acknowledging changes and instructs user to log off and back on to view the changes.
ALTERNATE COURSES:	None	
CONCLUSION:	The recruiter personalizes their web portal.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Recruiter Create Portal Settings Process Model
Recruiter
Assigns Portal Settings
Acceptance Notification
Create Web Portal Content
Add Recruiter Preferences
Recruiter
Query For Form Values
Values For Autopopulate Form
Portal Settings

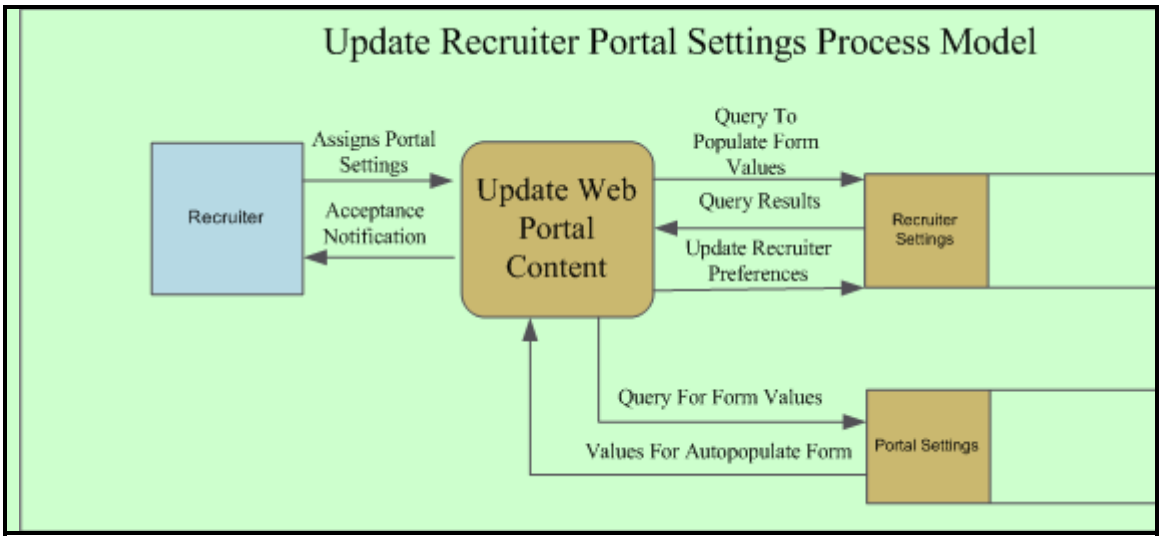
Recruiter Subsystem

USE CASE NAME:	Review Personal Web Portal Content	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Recruiter	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how a recruiter can review the customizable information contained within their personal web portal (ie RSS feeds, content)	
PRE-CONDITION:	The recruiter is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The recruiter reviews their personal settings within their RBAS personal portal.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The recruiter selects "review" portal settings from menu of choices.	**Step 2**: The system queries the database for the recruiter's currents settings.
		Step 3: If the recruiter has personal settings, RBAS displays the queries results.
ALTERNATE COURSES:	None	
CONCLUSION:	The recruiter reviews their personal web portal settings.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



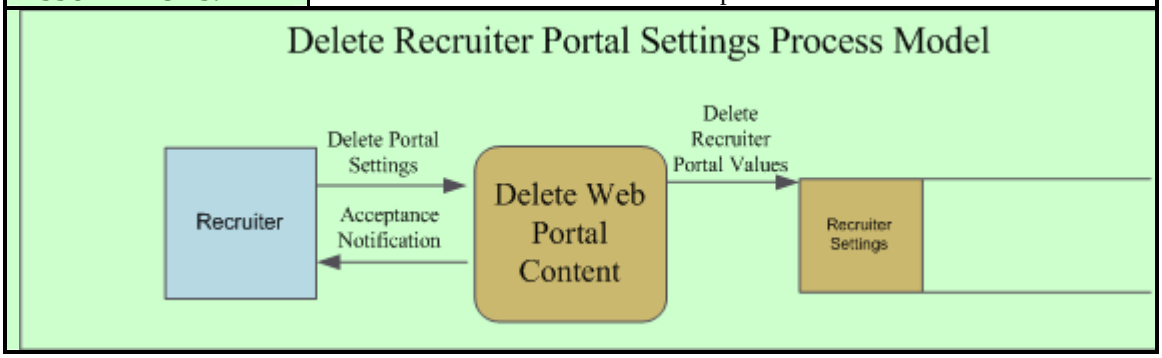
Recruiter Subsystem

USE CASE NAME:	Update Personal Web Portal Content	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Recruiter	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how a recruiter can update the customizable information contained within their personal web portal (ie RSS feeds, content)	
PRE-CONDITION:	The recruiter is registered Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The recruiter updates their personal settings within their RBAS personal portal.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The recruiter selects "update" portal settings from menu of choices.	**Step 2**: The system queries the database, populates the list of alternatives with current settings.
		Step 3: The system prompts the recruiter to update their selections.
	Step 4: The recruiter selects the services that he or she wants to populate their personal portal with. When the recruiter is done modifying their settings he or she hits "submit" to transmit settings back to RBAS.	**Step 5:** RBAS acknowledges the request, and updates the recruiter's preferences queue and updates the database.
		Step 6: The system sends a positive response acknowledging the changes and instructs user to log off and back on to view the changes.
ALTERNATE COURSES:	None	
CONCLUSION:	The recruiter updates their personal web portal settings.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Update Recruiter Portal Settings Process Model
Recruiter
Assigns Portal Settings
Acceptance Notification
Update Web Portal Content
Query To Populate Form Values
Query Results
Update Recruiter Preferences
Recruiter Settings
Query For Form Values
Values For Autopopulate Form
Portal Settings

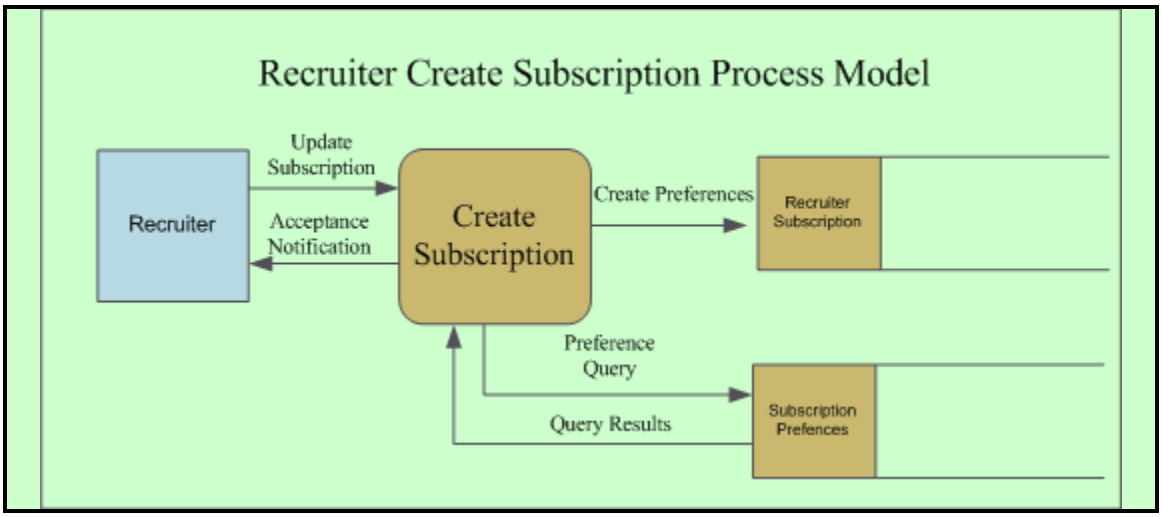
Recruiter Subsystem

USE CASE NAME:	Delete Personal Web Portal Content	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Recruiter	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how a recruiter can delete the customizable information contained within their personal web portal (ie RSS feeds, content)	
PRE-CONDITION:	The recruiter is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The recruiter deletes their personal settings within their RBAS personal portal.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The recruiter selects "delete" portal settings from menu of choices.	**Step 2**: The system queries the database for the recruiter's currents settings.
		Step 3: If the recruiter has personal settings, RBAS displays the query results and prompts the user to verify that they want to delete these settings.
	Step 4: The recruiter acknowledges the system prompt.	**Step 5:** The system deletes the recruiter's personal settings and restores the system's default settings.
ALTERNATE COURSES:	**SR Step 3**: The recruiter does not have any portal settings and the system displays an error message and the transaction is canceled.	
CONCLUSION:	The recruiter deletes their personal web portal settings.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



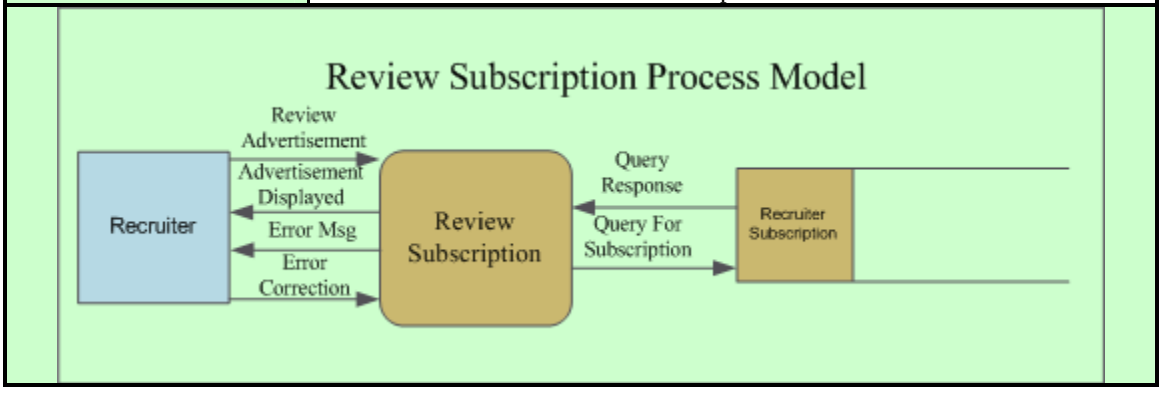
Recruiter Subsystem

USE CASE NAME:	Create Candidate Lead Subscription		**USE CASE TYPE** System Analysis
PRIORITY:	Medium		
SOURCE:	Requirements Analysis		
PRIMARY BUSINESS ACTOR:	Recruiter		
OTHER PARTICIPATING ACTORS:	Candidate		
DESCRIPTION:	This Use Case describes how a Recruiter can create a subscription to automatically receive updates (email or notification on portal) if new candidates that fit his or her criteria (geo loc, dates, MOS) have recently registered, posted new or updated information or deleted items from their profile.		
PRE-CONDITION:	The recruiter is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.		
TRIGGER:	This use case is initiated when a recruiter with roles clicks "Create Subscription"		
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**	
	Step 1: Recruiter with roles clicks "Create Subscription"	**Step 2**: Screen with subscription criteria (MOS, GeoLoc, Dates) appears for recruiter to select or input.	
	Step 3: Recruiter completes form and clicks submit.	**Step 4**: The system verifies the information.	
		Step 5: If the information is correct, the system accepts the subscription.	
		Step 6: The system places the recruiter and their search criteria in its subscription queue.	
		Step 7: Leads are generated for candidates that have subscribed to recruiter search services.	
		Step 8: The system compares the criteria of newly posted, updated or deleted candidates versus the criteria posted by subscribers.	
ALTERNATE COURSES:			
CONCLUSION:	This use case concludes when the recruiter receives a confirmation that the subscription has been created successfully.		
POST-CONDITION:	User is returned to portal homepage.		
BUSINESS RULES			
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS			
ASSUMPTIONS:	User must have access to NMCI compliant web browser.		


Recruiter Create Subscription Process Model
Recruiter
Update Subscription
Acceptance Notification
Create Subscription
Create Preferences
Recruiter Subscription
Preference Query
Query Results
Subscription Prefences

Recruiter Subsystem

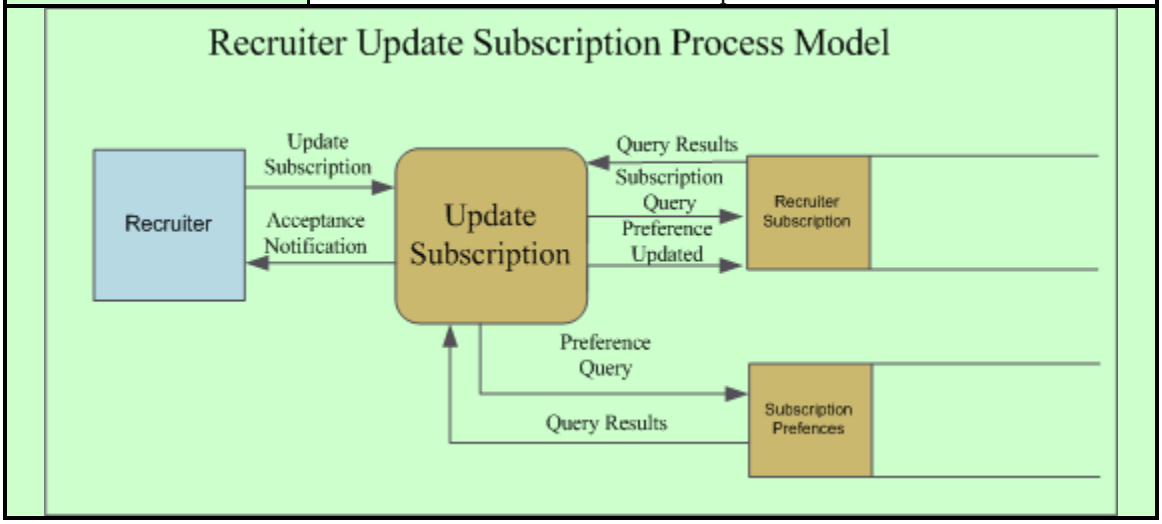
USE CASE NAME:	Review Candidate Lead Subscription	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR:	Recruiter	
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a recruiter can review their subscriptions without making any modifications to them.	
PRE-CONDITION:	Recruiter must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when a Recruiter with roles clicks "Review Subscriptions"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Recruiter with roles clicks "Review Subscriptions"	**Step 2**: The system will query the database to retrieve the recruiter's subscription information.
		Step 3: Once an active record is found, the system will display the retrieved subscription information.
	Step 4: Recruiter can review subscription information	
ALTERNATE COURSES:	**SR Step 3:** The system is unable to locate a subscription for the recruiter.	
	SR Step 4: The system displays an error message that informs the recruiter that he or she has no active subscriptions.	
CONCLUSION:	This use case concludes when the recruiter can review their current subscription(s).	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



Recruiter Subsystem

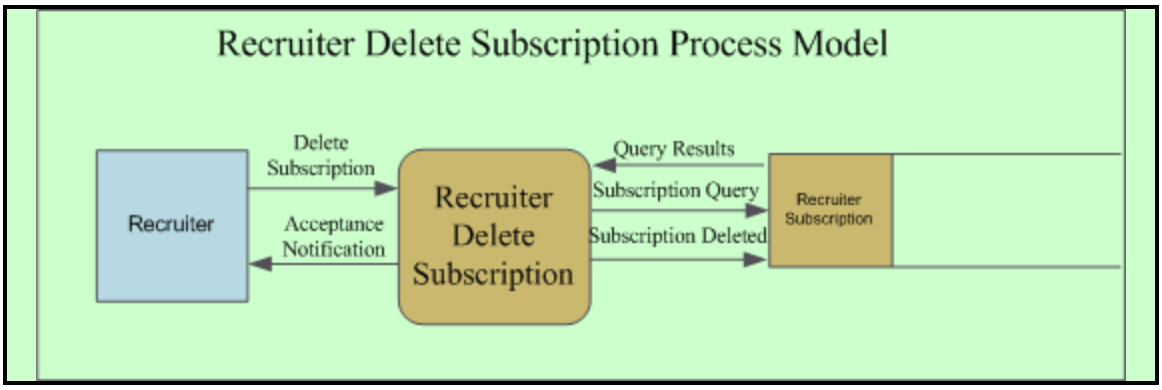
USE CASE NAME:	Update Candidate Lead Subscription	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR:	Recruiter	
OTHER PARTICIPATING ACTORS:	Candidate	
DESCRIPTION:	This Use Case describes how a recruiter can update their active subscriptions.	
PRE-CONDITION:	Recruiter must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when a Recruiter with roles clicks "Update Subscription"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Recruiter with roles clicks "Update Subscriptions"	**Step 2**: The system will query the database to retrieve the recruiter's subscription information.
		Step 3: Once an active record is found, the system will prompt the recruiter to verify if the information retrieved is the subscription they want to update.
	Step 4: The recruiter verifies the information and acknowledges by pressing continue.	**Step 5:** The system then opens a subscription edit window and populates the fields with the retrieved information and prompts the user to update the subscription.
	Step 6: The recruiter updates the information and hits "submit" when complete.	**Step 7:** The system error checks the information, if the information is correct the update is accepted, acknowledged and the database is updated.
		Step 8: The system places the recruiter and their search criteria in its subscription queue.
		Step 9: Leads are generated for candidates that have subscribed to recruiter search services.
		Step 10: The system compares the billet identifiers of newly posted, updated or deleted jobs versus the criteria posted by subscribers.
		Step 11: If the search criteria matches, an email is generated and sent to the recruiter or his portal is updated. (which ever method is selected)
ALTERNATE COURSES:	**SR Step 3:** The system is unable to locate a subscription for the recruiter.	
	SR Step 4: The system displays an error message that informs the recruiter that he or she has no active subscriptions.	
CONCLUSION:	This use case concludes when the recruiter can update their current subscription(s).	

POST-CONDITION:	User is returned to portal homepage.
BUSINESS RULES	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS	
ASSUMPTIONS:	User must have access to NMCI compliant web browser.



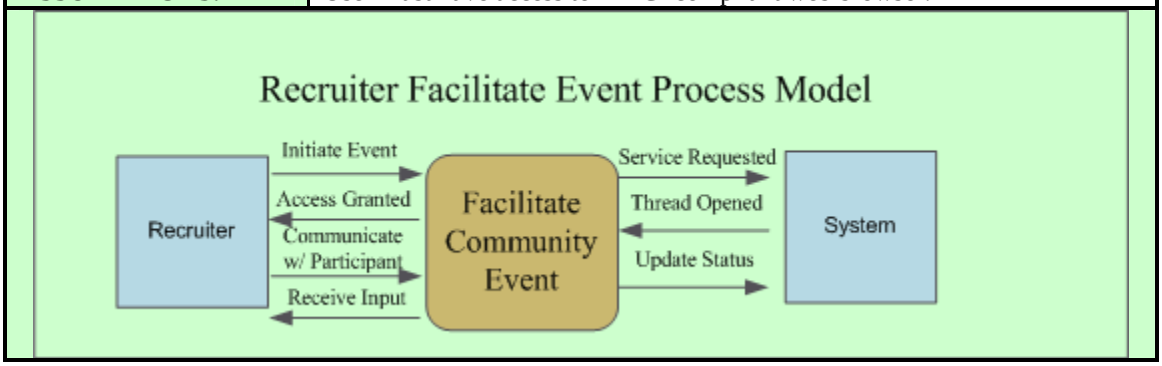
Recruiter Subsystem

USE CASE NAME:	Delete Candidate Lead Subscription	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR:	Reservist	
OTHER PARTICIPATING ACTORS:	Candidate	
DESCRIPTION:	This Use Case describes how a Recruiter can delete an active subscription.	
PRE-CONDITION:	You must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when a Recruiter with roles clicks "Delete Subscription"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The recruiter selects "delete" subscription from menu of choices.	**Step 2**: The system will query the database to retrieve the recruiter's subscription information.
		Step 3: Once an active record is found, the system will prompt the recruiter to verify if the information retrieved is the subscription they want deleted.
	Step 4: The recruiter verifies the information and acknowledges by pressing continue.	**Step 5:** The system then prompts the recruiter if they are certain they want to cancel this subscription.
	Step 6: The recruiter acknowledges his or her approval by clicking "yes"	**Step 7:** The system receives the response and deletes the subscription from the database
		Step 8: A success message is generated and displayed to the recruiter.
ALTERNATE COURSES:	**SR Step 3:** The system is unable to locate a subscription for the recruiter.	
	SR Step 4: The system displays an error message that informs the recruiter that he or she has no active subscriptions.	
	AA Step 6: The recruiter declines to delete subscription.	
	SR Step 7: The system acknowledges the negative response and deletes the transaction.	
	SR Step 8: The system displays successful cancellation message to user.	
CONCLUSION:	This use case concludes when the recruiter receives a confirmation that the subscription was successfully deleted.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Recruiter Delete Subscription Process Model
Recruiter
Delete Subscription
Acceptance Notification
Recruiter Delete Subscription
Query Results
Subscription Query
Subscription Deleted
Recruiter Subscription

Recruiter Subsystem

USE CASE NAME:	Facilitate Community Events	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR:	Recruiter	
OTHER PARTICIPATING ACTORS:	Candidate Employer	
DESCRIPTION:	This use case describes how a recruiter manages the forum and blog contents within their recruiting district.	
PRE-CONDITION:	You must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when a recruiter with roles clicks “Facilitate Community Events”	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Recruiter with roles clicks “Facilitate Community Events”	**Step 2**: Screen with forum and blog menus is displayed.
	Step 3: Recruiter clicks on forum or blog to add/edit items.	
ALTERNATE COURSES:		
CONCLUSION:	This use case concludes when the recruiter receives a confirmation that the forum/blog was successfully updated.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



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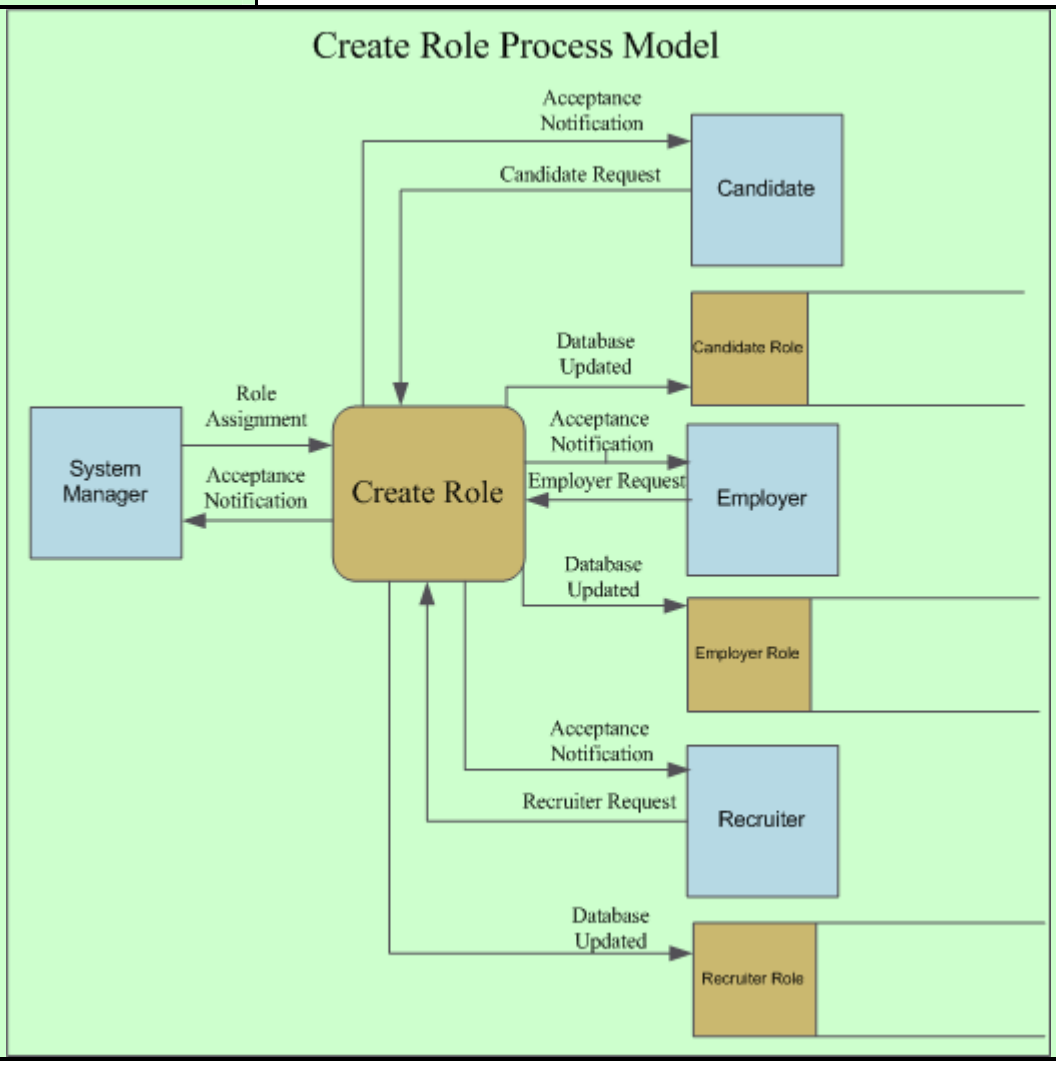
APPENDIX D. MANAGER USE CASES

Management Subsystem

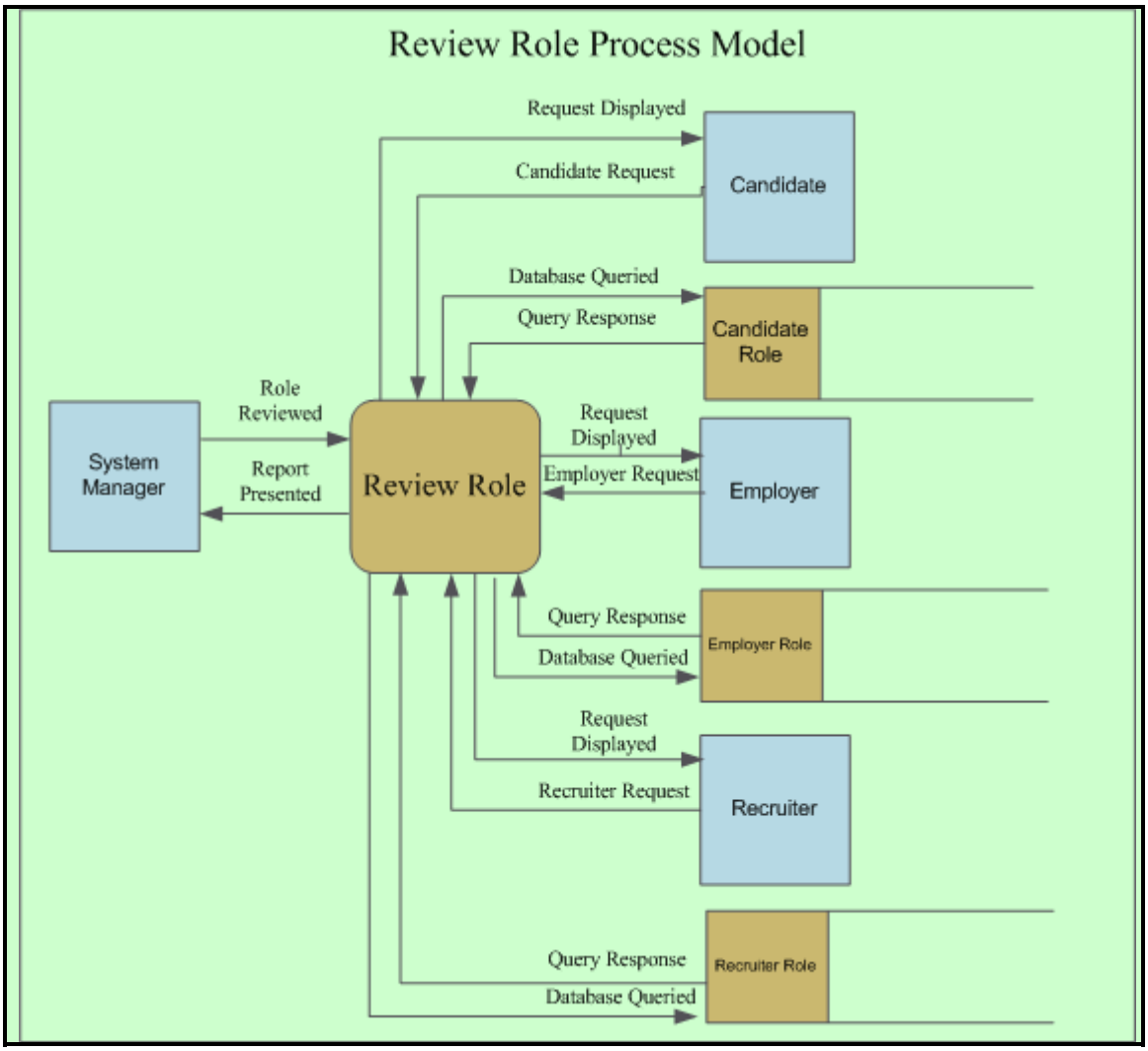
USE CASE NAME:	Create Roles For Users or Groups of RBAS	**USE CASE TYPE**
PRIORITY:	High	System Analysis
SOURCE:	System Requirement	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter Candidate	
DESCRIPTION:	This Use Case describes how system managers control the access and privileges of system users by creating individual and group accounts.	
PRE-CONDITION:	The System Manager is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The Use Case is initiated when the System Manager creates a new user.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The System Manager role request queue has pending requests. System Manager selects "Assign Roles" from the management portal.	**Step 2**: The system auto populates a user input form with the values in RBAS and prompts the System Administrator to assign the user or groups roles and rights.
	Step 3: The System Manager selects the appropriate roles and responsibilities and submits them to RBAS.	**Step 4**: The system verifies the information inputted into the form.
		Step 5: The system accepts the new roles assignment and stores it in the database.
		Step 6: The system generates an email and broadcast for the user who was granted rights to the system, which includes all of their logon information and access privileges.
		Step 7: The system generates a success message for the System Manager and prompts the user to add another group or user.
	Step 8: The user responds either negatively or positively to the prompt. If positive the process starts over at Step 1 else the system exits the application.	

ALTERNATE COURSES:	**SR Step 3**: All the required information not present, error message sent to user.
	AA Step 4: System Manager corrects the error and resubmits.
	Return to step 2 of the "Typical Course of Events"
	OR
	AA Step 5: The System Manager responds negatively to system prompt and request is canceled.
CONCLUSION:	A new group or user is created.
POST-CONDITION:	
BUSINESS RULES	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS	



Management Subsystem

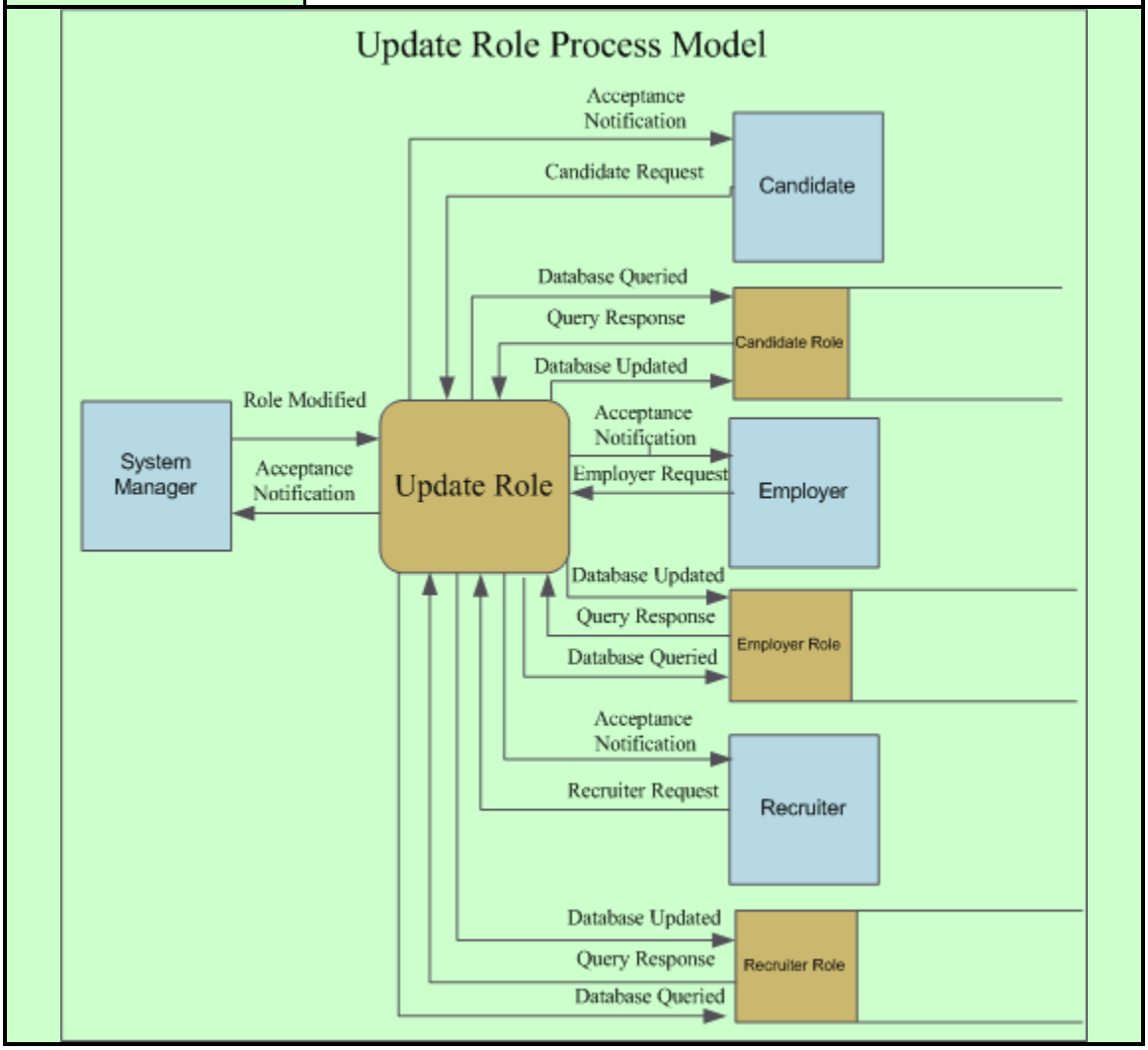
USE CASE NAME:	Review Roles For Users or Groups of RBAS	**USE CASE TYPE**
PRIORITY:	High	System Analysis
SOURCE:	System Requirement	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a System Manager can review the roles and rights assigned roles to a user or a group.	
PRE-CONDITION:	The System Manager is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The Use Case is initiated when the System Manager chooses to review user or group's rights and responsibilities.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The System Manager selects a user or group and then selects "review privileges" from the management portal.	**Step 2**: The system auto populates a user/group report with the current roles and rights value and then ask the user if he or she wishes to view another.
	Step 3: The System Manager views the data, and either positively or negatively responds to the prompt by selecting "yes" or "no". If the System Manager selects yes the process begins over at Step 1 else the system exits to the homepage.	
ALTERNATE COURSES:	**SR Step 3**: All the required information not present, error message sent to user.	
	AA Step 4: System Manager corrects the error and resubmits.	
	Return to step 2 of the "Typical Course of Events"	
	OR	
	AA Step 5: The System Manager responds negatively to system prompt and request is canceled.	
CONCLUSION:	The System Manager views the roles and rights of a group or user.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:		


Review Role Process Model
Request Displayed
Candidate Request
Candidate
Database Queried
Query Response
Candidate Role
Role Reviewed
System Manager
Report Presented
Review Role
Request Displayed
Employer Request
Employer
Query Response
Database Queried
Employer Role
Request Displayed
Recruiter Request
Recruiter
Query Response
Database Queried
Recruiter Role

Management Subsystem

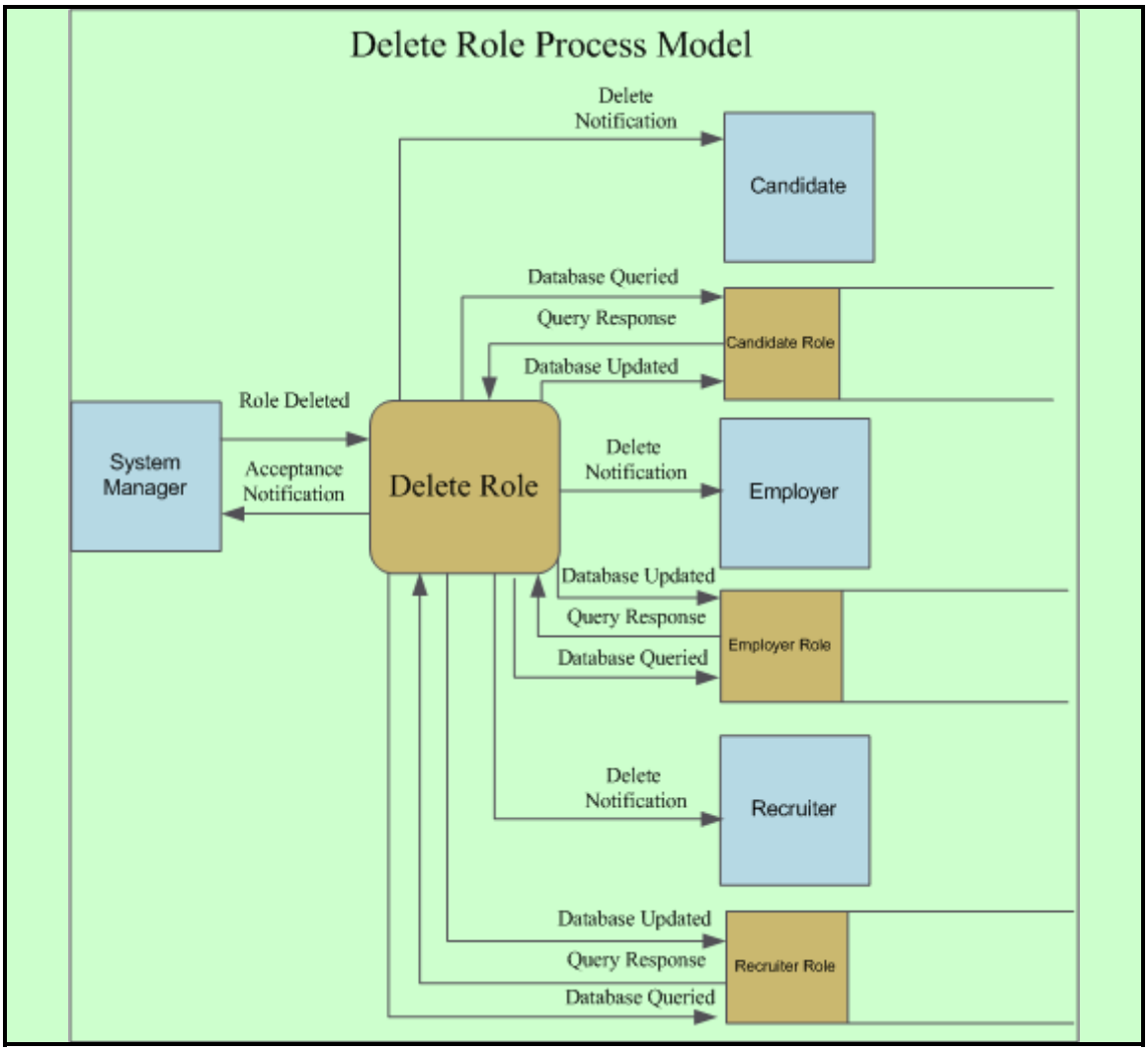
USE CASE NAME:	Update User or Group Roles and Rights	**USE CASE TYPE**
PRIORITY:	High	System Analysis
SOURCE:	System Requirement	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter Candidate	
DESCRIPTION:	This Use Case describes how a System Manager can update the roles and rights assigned roles to a user or a group.	
PRE-CONDITION:	The System Manager is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The Use Case is initiated when the System Manager chooses to update a user or group's rights and responsibilities.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The System Manager selects a user or group and then selects "update privileges" from the management portal.	**Step 2**: The system auto populates a user or group edit form with the values stored in the database and prompts the System Administrator to make any changes the user or groups roles and rights that they desired.
	Step 3: The System Manager selects the appropriate roles and responsibilities and submits them to RBAS.	**Step 4**: The system verifies the information inputted into the form.
		Step 5: The system accepts the changes and stores it in the database.
		Step 6: The system generates an email and broadcast for the user which includes all the changes that were made to the account.
		Step 7: The system generates a success message for the System Administrator and asks the user if he or she wish to edit another group or user.
	Step 8: The user responds either negatively or positively to the prompt. If positive the process starts over at Step 1 else the system exits the application.	
ALTERNATE COURSES:	**SR Step 3**: All the required information not present, error message sent to user.	
	AA Step 4: System Manager corrects the error and resubmits.	
	Return to step 2 of the "Typical Course of Events"	
	OR	
	AA Step 5: The System Manager responds negatively to system prompt and	

	request is canceled.
CONCLUSION:	The System Manager makes the desired changes to the roles and rights of a group or user.
POST-CONDITION:	
BUSINESS RULES	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS	
ASSUMPTIONS:	



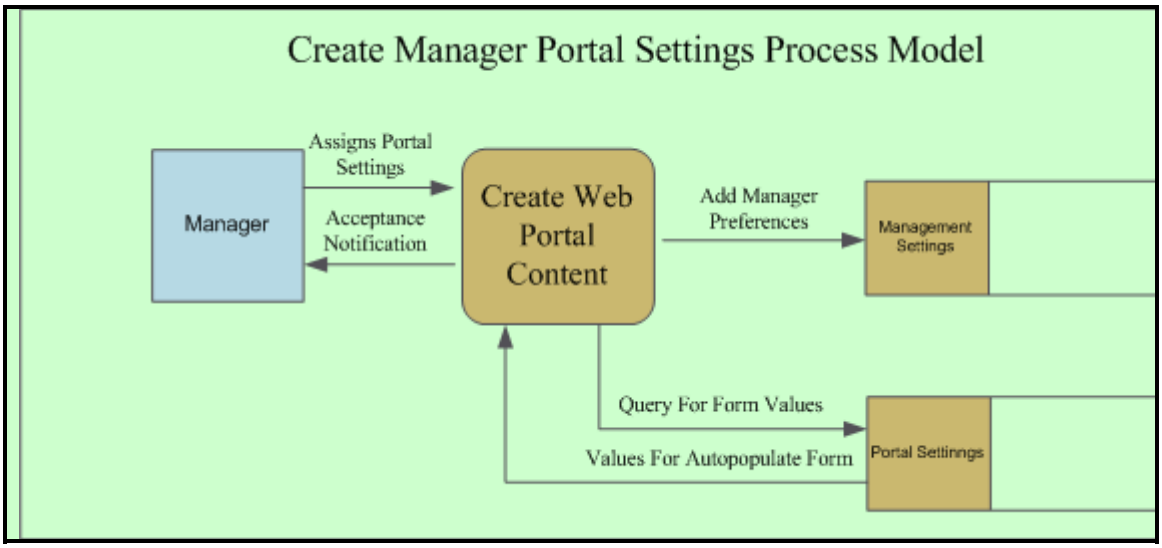
Management Subsystem

USE CASE NAME:	Delete User or Group Roles and Rights	**USE CASE TYPE**
PRIORITY:	High	System Analysis
SOURCE:	Requirement Analysis	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Candidate Employer Recruiter	
DESCRIPTION:	This Use Case describes how a System Manager deletes a user access to the system.	
PRE-CONDITION:	The System Manager is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The System Manager selects a user or group whose rights they want to delete.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The actor selects a user or group whose rights are going to be deleted and then selects "delete user" from the management portal.	**Step 2**: The system queries the database and auto populates a delete user input form and prompts the System Administrator to verify that they want to remove this user or group from the system.
	Step 3: The user responds either negatively or positively to the prompt by clicking on "yes" or "no".	**Step 3**: If the System Manager positively responds then the system will honor the delete request of the user or group and update the database.
		Step 4: The system generates a success message for the System Administrator.
		Step 6: The system generates an email to the user and/or group and informs them of their privileges being revoked.
ALTERNATE COURSES:	**Step 3**: If the System Manager negatively responds to the acknowledgement prompt the transaction will be cancelled.	
CONCLUSION:	The user and/or group rights were revoked.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:		


Delete Role Process Model
Delete
Notification
Candidate
Database Queried
Query Response
Database Updated
Candidate Role
Role Deleted
System
Manager
Acceptance
Notification
Delete Role
Delete
Notification
Employer
Database Updated
Query Response
Database Queried
Employer Role
Delete
Notification
Recruiter
Database Updated
Query Response
Database Queried
Recruiter Role

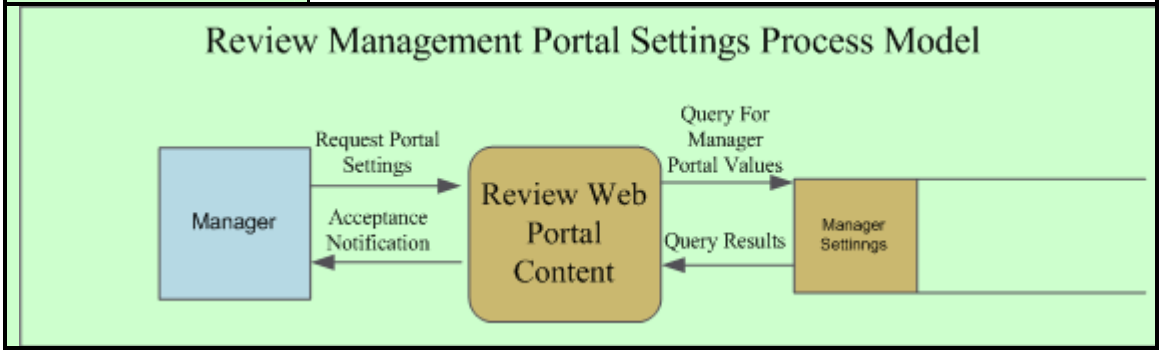
Management Subsystem

USE CASE NAME:	Create Personal Content for Management and Site Portals	**USE CASE TYPE**
PRIORITY:	High	System Analysis
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employers Recruiters Candidates	
DESCRIPTION:	This use case describes how a System Manager can create content for the management web portal as well as control the core content for the entire RBAS site.	
PRE-CONDITION:	The System Manager is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The System Manager creates site wide content or management portal settings in RBAS.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The System Manager logons to RBAS.	**Step 2**: The system prompts the user to select what content they want included in the management portal or site core portal. The user will be provided with a list of alternative to select from.
	Step 3: The System Manager selects the services that he or she wants to populate the management or core site portal with. When the System Manager is done selecting content he or she clicks "submit" to transmit settings back to RBAS.	**Step 4:** RBAS acknowledges the request, and updates the system manager's preferences queue and updates the database.
		Step 5: The system sends a positive response acknowledging changes and instructs user to log on and off to view the changes.
ALTERNATE COURSES:	None	
CONCLUSION:	The system manager creates the attributes for the management and/or the site core web portal.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:		


Create Manager Portal Settings Process Model
Manager
Assigns Portal Settings
Acceptance Notification
Create Web Portal Content
Add Manager Preferences
Management Settings
Query For Form Values
Values For Autopopulate Form
Portal Settinngs

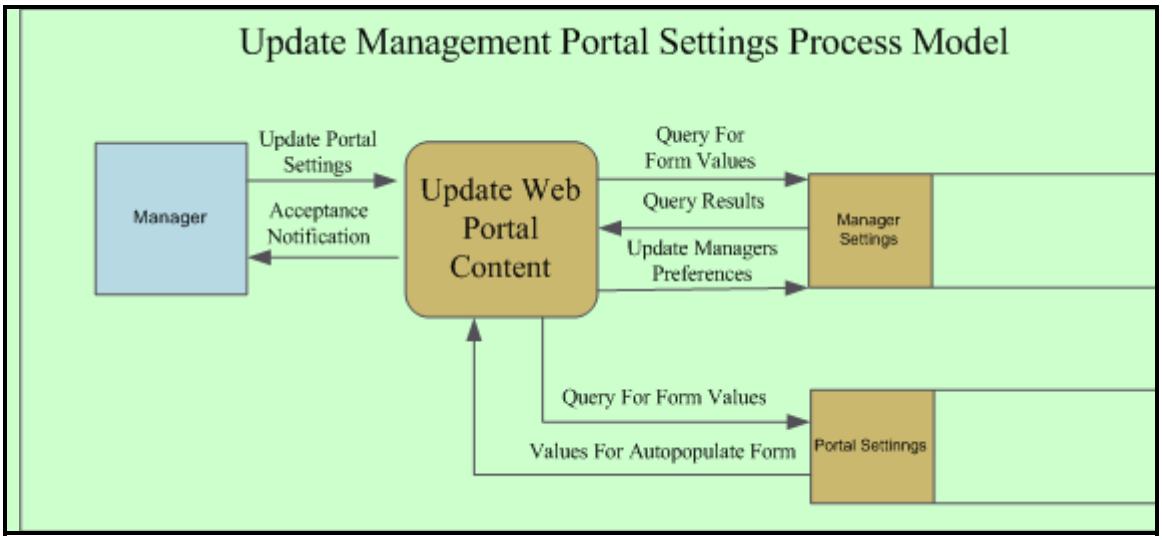
Management Subsystem

USE CASE NAME:	Review Management and Site Web Portal Content	**USE CASE TYPE**
PRIORITY:	Medium	System Analysis
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter Candidate	
DESCRIPTION:	This use case describes how a System Manager can review settings for both the Managerial and Site web portal for the Reserve Billet Advertisement System.	
PRE-CONDITION:	The System Manager is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The System Manager reviews Managerial and/or Site web portal settings in RBAS.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The system manager selects "view" Managerial web portal settings or "view" Site web portal settings from menu of choices.	**Step 2**: The system queries the database for the System Manager's current settings.
		Step 3: RBAS displays the queries results.
ALTERNATE COURSES:	SR Step 3: If the RBAS's settings have not been modified from the default values the system displays an error message.	
CONCLUSION:	The System Manager reviews either or both the Managerial and/or the Site web portal settings.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:		



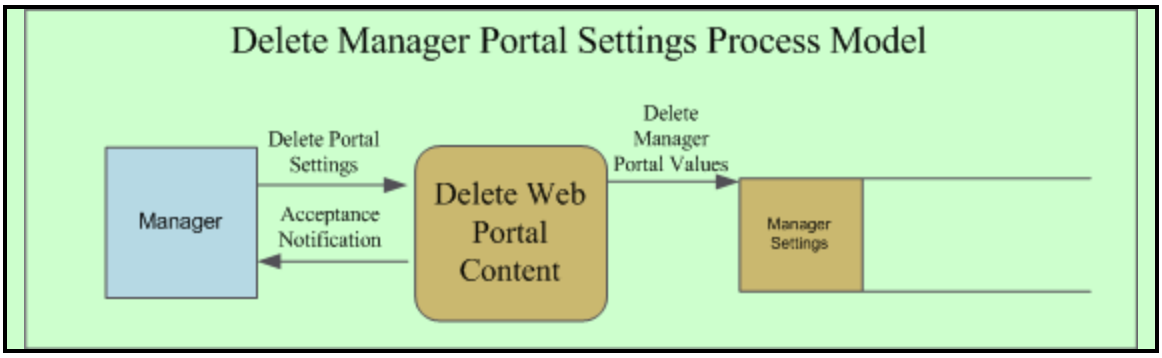
Management Subsystem

USE CASE NAME:	Update Personal Content for Management and Site Portals	**USE CASE TYPE**
PRIORITY:	Medium	System Analysis
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter Candidate	
DESCRIPTION:	This use case describes how a System Manager can update their personalized web portal as well as the core portal attributes for the entire Reserve Billet Advertisement System.	
PRE-CONDITION:	The System Manager is registered Reserve Billet Advertisement System and have been assigned the appropriate level of access.	
TRIGGER:	The System Manager chooses to update their personal web portal content site content in RBAS.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The system manager selects "update" portal settings from menu of choices.	**Step 2**: The system queries the database, populates the list of alternative with current settings.
		Step 3: The system prompts the system manager to update their selections.
	Step 3: The system manager selects the services that he or she wants to populate their personal portal with. When the user is done modifying their settings he or she hits "submit" to transmit settings back to RBAS.	**Step 4:** RBAS acknowledges the request, and updates the member's preferences queue and updates the database.
		Step 5: The system sends a positive response acknowledging the changes and instructs user to log on and off to view the changes.
ALTERNATE COURSES:	**SR Step 2:** The system is query results are negative.	
	SR Step 3: The system presents and error message informing the candidate and asks the user if they would like to personalize their portal.	
	AA Step 4: If the System Manager provides a positive acknowledgement they proceed to step 2 of the Create Personal Portal Content. If not, the transaction is cancelled.	
CONCLUSION:	The System Manager updates their settings for their personalized web portal or the settings for the site web portal are updated.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:		


Update Management Portal Settings Process Model
Manager
Update Portal Settings
Acceptance Notification
Update Web Portal Content
Query For Form Values
Query Results
Update Managers Preferences
Manager Settings
Query For Form Values
Values For Autopopulate Form
Portal Settinngs

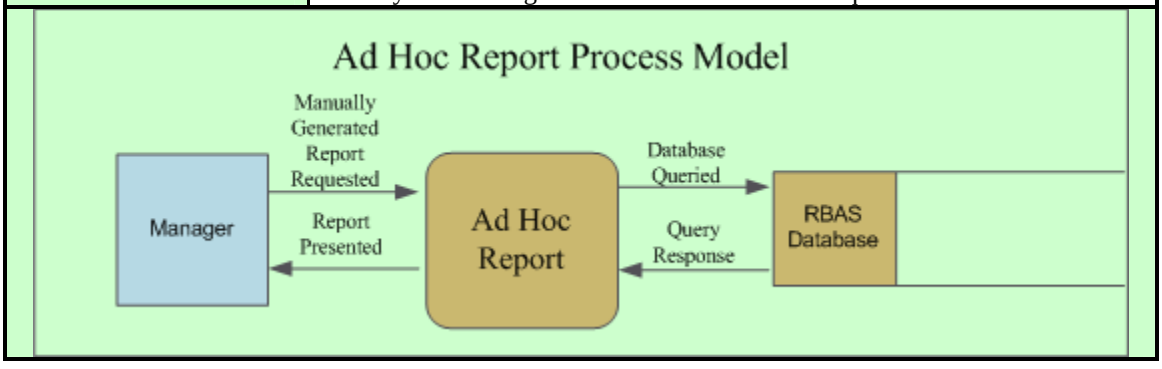
Manager Subsystem

USE CASE NAME:	Delete Personal Content for Management and Site Portals	**USE CASE TYPE**
PRIORITY:	Medium	System Analysis
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter Candidate	
DESCRIPTION:	This use case describes how a System Manager can delete settings for the Management or Site web portal for the Reserve Billet Advertisement System.	
PRE-CONDITION:	The System Manager is registered Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The System Manager deletes content from either the Management or Site web portal.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The System Manager selects "delete" management portal settings or "delete" site portal settings from menu of choices.	**Step 2**: The system queries the database for the System Manager's current settings.
		Step 3: RBAS displays the query results and prompts the user to verify that they want to delete the settings.
	Step 4: The system manager acknowledges the system prompt.	**Step 5:** The system deletes the user's personal settings and restores the system's default settings.
ALTERNATE COURSES:	**SR Step 3**: RBAS is at the default values of the system therefore the System Manager doesn't have any portal settings to delete.	
	SR Step 4: The system displays an error message and transaction is canceled.	
CONCLUSION:	The candidate deletes personal web portal settings.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:		


Delete Manager Portal Settings Process Model
Manager
Delete Portal Settings
Acceptance Notification
Delete Web Portal Content
Delete Manager Portal Values
Manager Settings

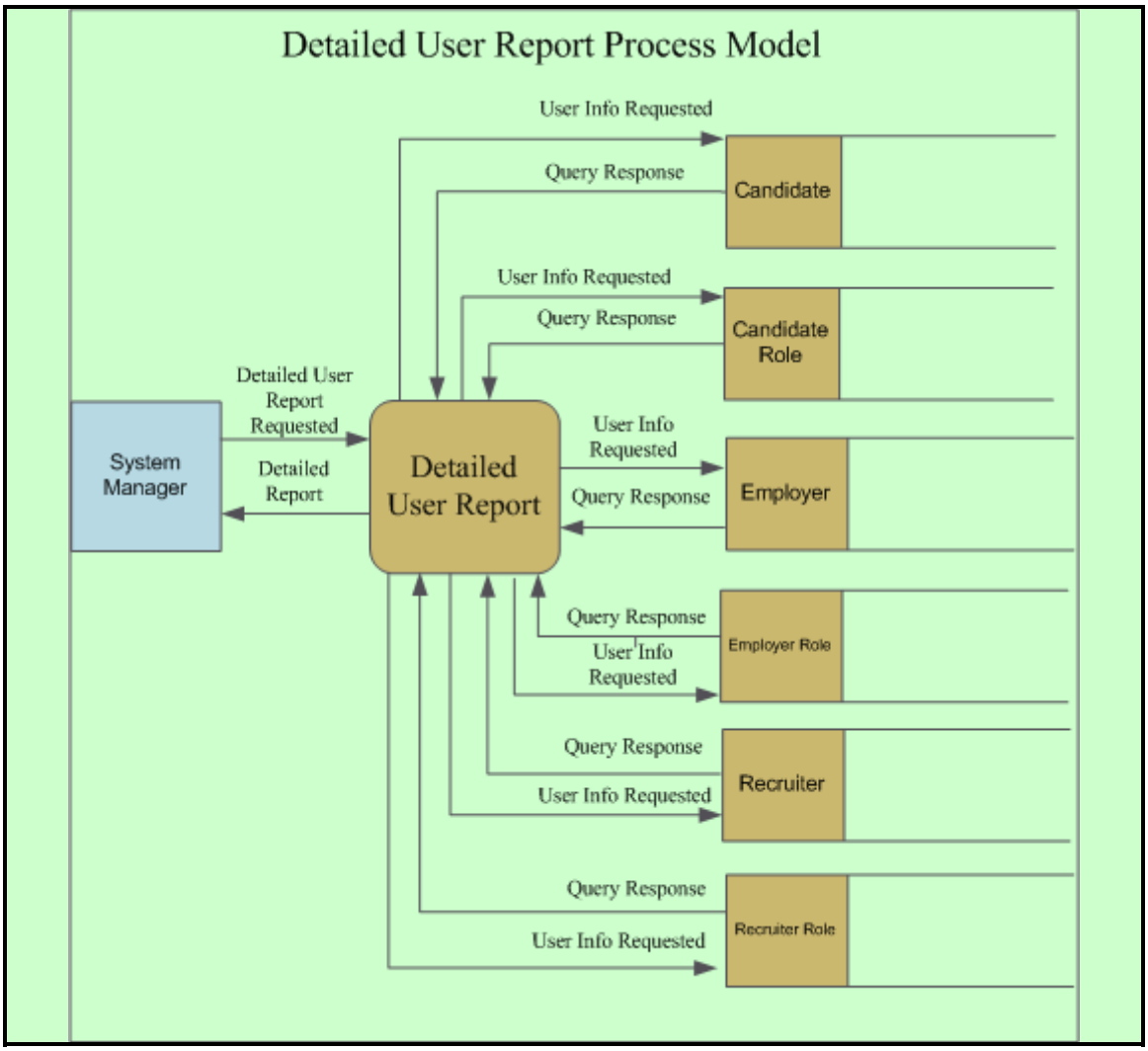
Management Subsystem

USE CASE NAME:	Generate Ad Hoc Reports	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a System Manager generates and views ad hoc reports.	
PRE-CONDITION:	The System Manager is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	System Manager inputs query data into the report input and form and hits submit.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The System Manager selects "create ad hoc report" and chooses which fields to include in the report and clicks submit.	**Step 2**: System verifies completeness of data entered into query.
		Step 3: If all required information is entered, the system performs the query.
		Step 4: System displays results.
ALTERNATE COURSES:	**SR Step 3**: All the required information not present, error message sent to user.	
	AA Step 4: The System Manager corrects the error and resubmits.	
	SR Step 5: System verifies completeness of data entered into query.	
	SR Step 6: If all required information is entered, the system performs the query.	
	SR Step 7: System displays results.	
CONCLUSION:	The System Manager is presented with report requested.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	The System Manager has access and the roles required for use of RDOL.	



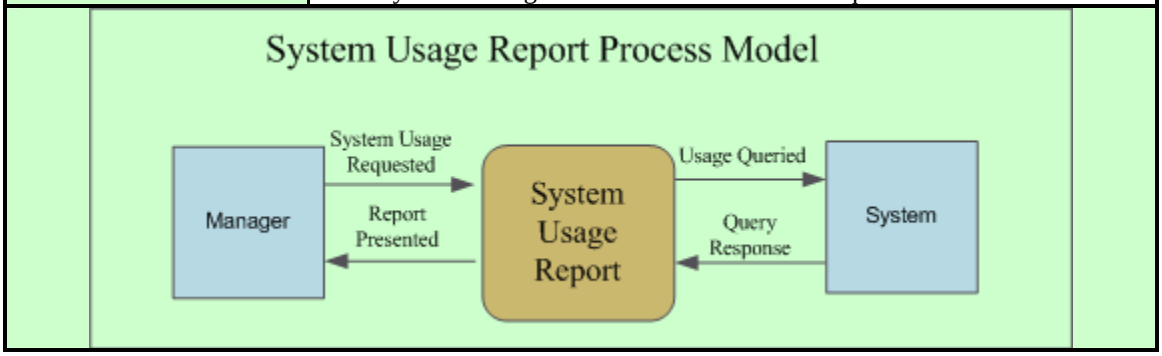
Management Subsystem

USE CASE NAME:	Generate Detailed User Report	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a System Manager generates a detailed report on an individual user.	
PRE-CONDITION:	System Manager has applied for and received access to the system with appropriate permissions.	
TRIGGER:	System Manager identifies a user of interest and queries the system by hitting submit.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The System Manager selects "detailed user report" from the management portal and clicks submit.	**Step 2**: System queries the database for the user of interest and retrieves the data requested.
		Step 3: System displays results to the System Manager.
		Step 4: The system asks the user if he or she wishes to view another user's information.
	Step 5: The System Manager responds positively the user clicks "yes', the system manager selects another user and the process starts over else the transaction is complete.	
ALTERNATE COURSES:	**SR Step 3**: The user doesn't exist in the database and a error message is displayed.	
	AA Step 4: The System Manager corrects the error and resubmits.	
	SR Step 5: System verifies completeness of data entered into query.	
	SR Step 6: If all required information is entered, the system performs the query.	
	SR Step 7: System displays results.	
CONCLUSION:	The System Manager is presented with report requested.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	The System Manager has access and the roles required for use of RDOL.	


Detailed User Report Process Model
User Info Requested
Query Response
Candidate
User Info Requested
Query Response
Candidate Role
Detailed User Report Requested
System Manager
Detailed Report
Detailed User Report
User Info Requested
Query Response
Employer
Query Response
User Info Requested
Employer Role
Query Response
User Info Requested
Recruiter
Query Response
User Info Requested
Recruiter Role

Management Subsystem

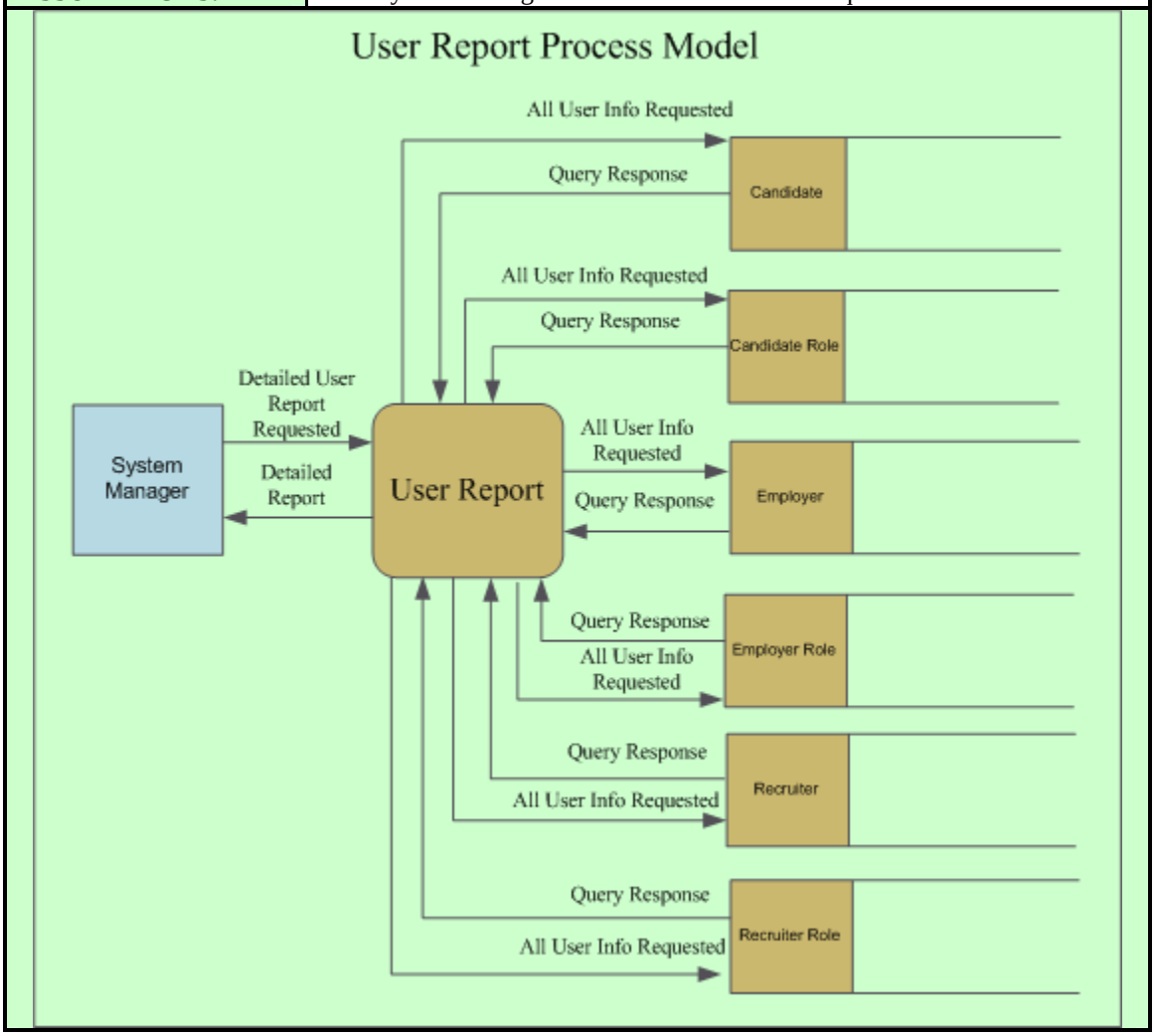
USE CASE NAME:	Generate System Usage Report	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a System Manager generates a report that tracks the use of the RBAS system.	
PRE-CONDITION:	System Manager has applied for and received access to the system with appropriate permissions.	
TRIGGER:	System queries the system for use rates.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Manager selects "system usage report" from the management portal and clicks submit.	**Step 2**: System queries the database and retrieves the data requested.
		Step 3: System displays results to the System Manager.
		Step 4: The system asks the user if they wish to generate another use.
	Step 5: If the System Manager responds positively the user clicks "yes', the system manager is provided with a list of alternatives and the process starts over, else the transaction is complete.	
ALTERNATE COURSES:		
CONCLUSION:	The System Manager is presented with report requested.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	The System Manager has access and the roles required for use of RDOL.	



Management Subsystem

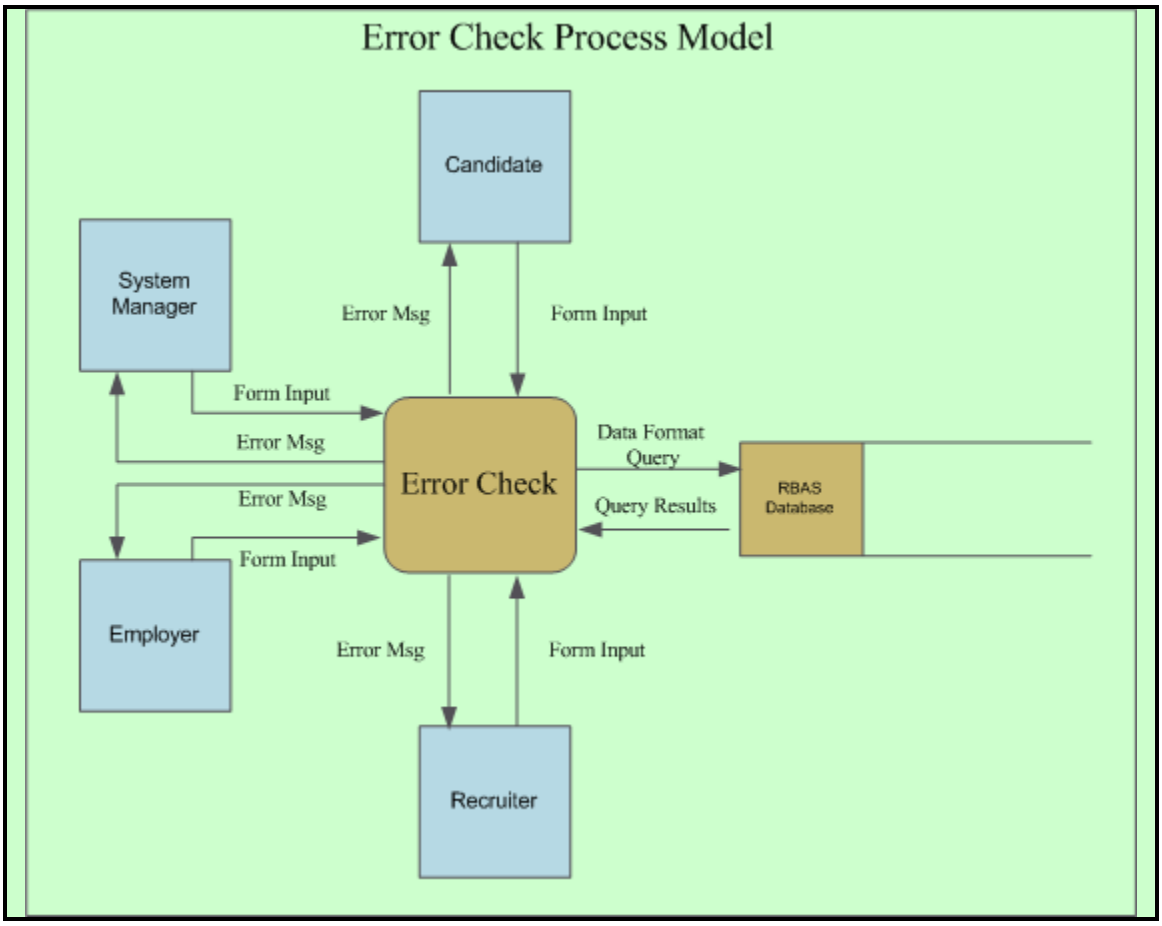
USE CASE NAME:	Generate User Overview Report	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how a System Manager generates a report that displays all the users of a specific group or category that is registered in the RBAS system.	
PRE-CONDITION:	System Manager has applied for and received access to the system with appropriate permissions.	
TRIGGER:	System Manager identifies a category or group of users of interest and queries the system by hitting submit.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: After selecting the group or category of interest the System Manager selects "user category report" from the management portal and clicks submit.	**Step 2**: System queries the database for the group or category of users of interest and retrieves the data requested.
		Step 3: System displays results to the System Manager.
		Step 4: The system asks the user if he or she wishes to view another group or category of users.
	Step 5: If the System Manager responds positively the user clicks "yes', the system manager selects another group or category of users and the process starts over, else the transaction is complete.	
ALTERNATE COURSES:	**SR Step 3**: The group or category of users doesn't exist in the database and an error message is displayed.	
	AA Step 4: The System Manager corrects the error and resubmits.	
	SR Step 5: System verifies completeness of data entered into query.	
	SR Step 6: If all required information is entered, the system performs the query.	
	SR Step 7: System displays results to the Manager.	
CONCLUSION:	The System Manager is presented with report requested.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		

ASSUMPTIONS:	The System Manager has access and the roles required for use of RDOL.



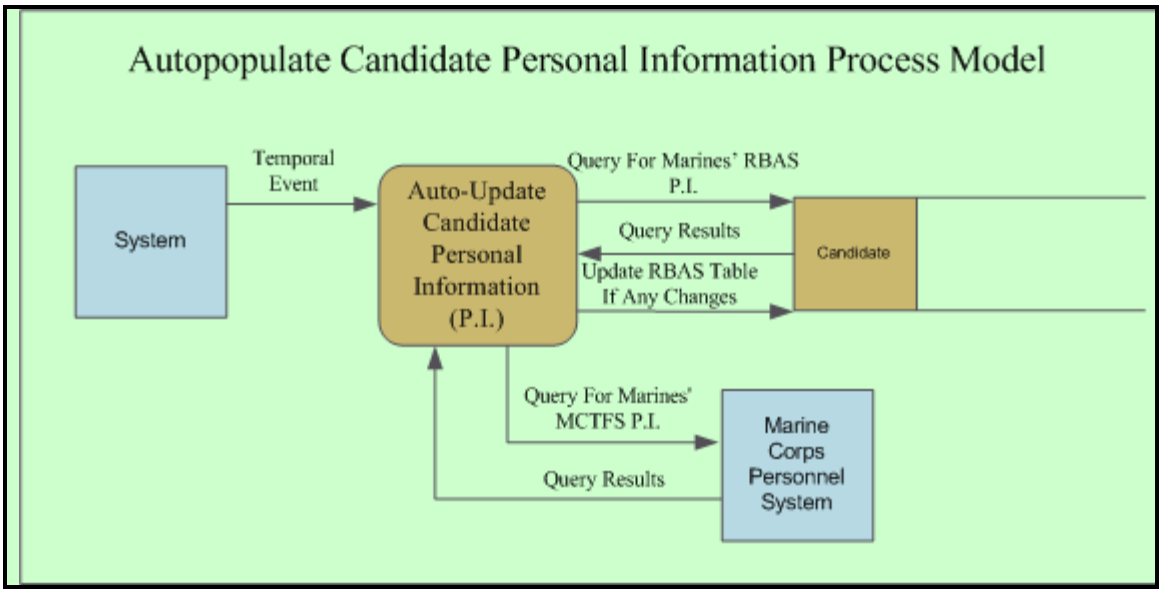
Management Subsystem

USE CASE NAME:	Ensure all form input data is valid and complete	**USE CASE TYPE**
PRIORITY:	High	System Analysis
SOURCE:	System Requirement	
PRIMARY BUSINESS ACTOR	System	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employer Recruiter Candidate System Manager	
DESCRIPTION:	This Use Case describes how the RBAS system automatically checks all input for completeness and accuracy.	
PRE-CONDITION:	A user has inputted information into an input form for RBAS.	
TRIGGER:	The Use Case is initiated when user submits information via an input form.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: A user submits information via an input form by hitting "submit".	**Step 2**: The system uses defined business rules to verify that the input submitted is complete and accurate. This includes checking for missing information as well as for incorrectly formatted data.
		Step 3: The system acknowledges validity of input and stores the data in the database.
ALTERNATE COURSES:	**SR Step 3**: All the required information not present, error message sent to user.	
	AA Step 4: The user corrects the error and resubmits.	
	Return to step 2 of the "Typical Course of Events"	
CONCLUSION:	The user submits complete and accurate data into an input form	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Error Check Process Model
Candidate
System Manager
Error Msg
Form Input
Form Input
Error Msg
Error Check
Data Format Query
RBAS Database
Query Results
Error Msg
Form Input
Employer
Error Msg
Form Input
Recruiter

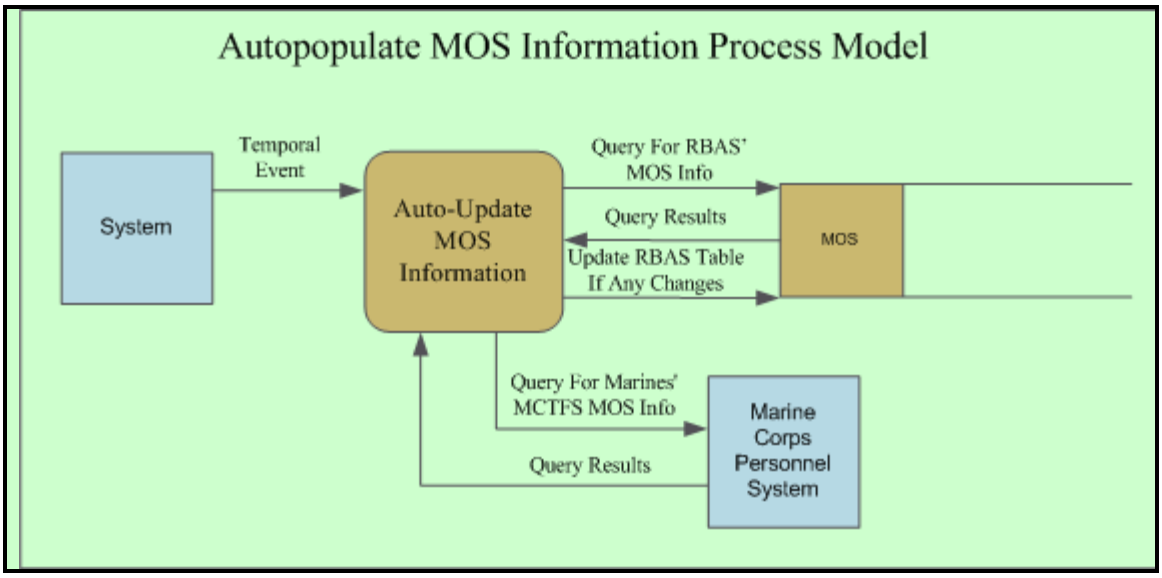
Manager Subsystem

USE CASE NAME:	Automated Update of Candidate Table		**USE CASE TYPE** System Analysis
PRIORITY:	Medium		
SOURCE:	Requirements Analysis		
PRIMARY BUSINESS ACTOR	System		
PRIMARY SYSTEM ACTOR			
OTHER PARTICIPATING ACTORS:	MCTFS		
DESCRIPTION:	This use case describes how a candidate's personal information gets populated from MCTFS.		
PRE-CONDITION:			
TRIGGER:	This event is a temporal trigger that occurs twice weekly (nominally).		
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**	
	Step 1: Temporal event occurs	**Step 1**: The system queries records that are currently registered in RBAS.	
		Step 2: Most recent MCTFS data is then queried for those records.	
		Step 3: System then compares actual data with updated data.	
		Step 4: The two datasets are compared for changes.	
		Step 5: If system detects changes in data, RBAS candidate table is updated with new information.	
ALTERNATE COURSES:	**SR Step 2:** If MCTFS is unavailable at runtime, error message will be displayed to system manager.		
CONCLUSION:	The candidate table information is updated.		
POST-CONDITION:			
BUSINESS RULES			
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS			
ASSUMPTIONS:	MCTFS is functioning properly.		


Autopopulate Candidate Personal Information Process Model
System
Temporal Event
Auto-Update Candidate Personal Information (P.I.)
Query For Marines' RBAS P.I.
Query Results
Update RBAS Table If Any Changes
Candidate
Query For Marines' MCTFS P.I.
Query Results
Marine Corps Personnel System

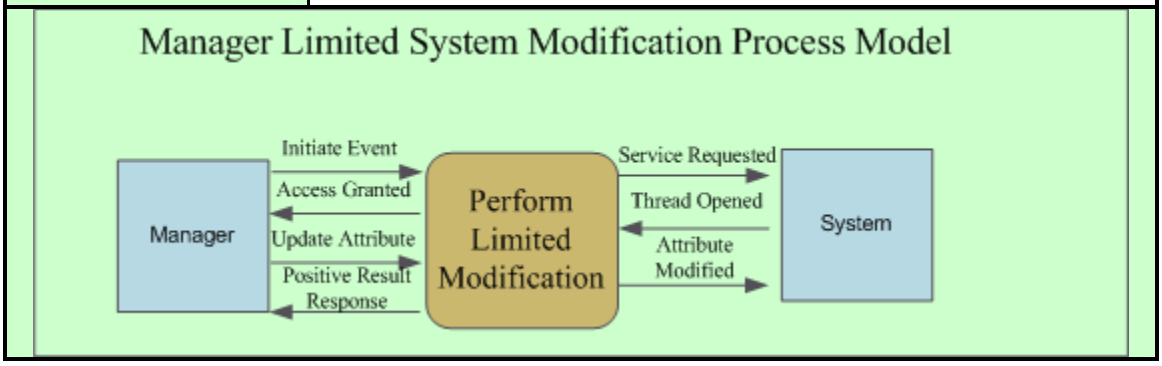
Management Subsystem

USE CASE NAME:	Automated Update of MOS Table		**USE CASE TYPE** System Analysis
PRIORITY:	Medium		
SOURCE:	Requirements Analysis		
PRIMARY BUSINESS ACTOR	System		
PRIMARY SYSTEM ACTOR			
OTHER PARTICIPATING ACTORS:	MCTFS		
DESCRIPTION:	This use case describes how the MOS table gets populated from MCTFS.		
PRE-CONDITION:			
TRIGGER:	This event is a temporal trigger that occurs quarterly (nominally).		
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**	
	Step 1: Temporal event occurs	**Step 1**: The system queries MOS table resident in RBAS.	
		Step 2: Most recent MCTFS MOS information is queried.	
		Step 3: System then compares actual data with updated data.	
		Step 4: The two datasets are compared for changes.	
		Step 5: If system detects changes in data, RBAS MOS table is updated with new information.	
ALTERNATE COURSES:	**SR Step 2:** If MCTFS is unavailable at runtime, error message will be displayed to system manager.		
CONCLUSION:	The MOS table information is updated.		
POST-CONDITION:			
BUSINESS RULES			
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS			
ASSUMPTIONS:	MCTFS is functioning properly.		


Autopopulate MOS Information Process Model
System
Temporal Event
Auto-Update MOS Information
Query For RBAS' MOS Info
Query Results
Update RBAS Table If Any Changes
MOS
Query For Marines' MCTFS MOS Info
Query Results
Marine Corps Personnel System

Management Subsystem

USE CASE NAME:	Perform Limited Modification to the System	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employers Recruiters Candidates	
DESCRIPTION:	This Use Case describes how system managers will be able to modify limited website content. (e.g. change aesthetics of web front end, style sheets, nomenclature, ADSW to ADOS)	
PRE-CONDITION:	The System Manager is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The System Manager performs limited modifications to RBAS.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The System Manager logons to RBAS and selects "modify system settings".	**Step 2**: The system displays options to manager of editable regions.
	Step 3: The System Manager chooses areas to modify.	**Step 4:** The system displays a preview of the system with changes.
	Step 5: The system prompts manager to accept or reject changes.	
ALTERNATE COURSES:	None	
CONCLUSION:	The system manager successfully modifies the RBAS system settings/aesthetics.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:		

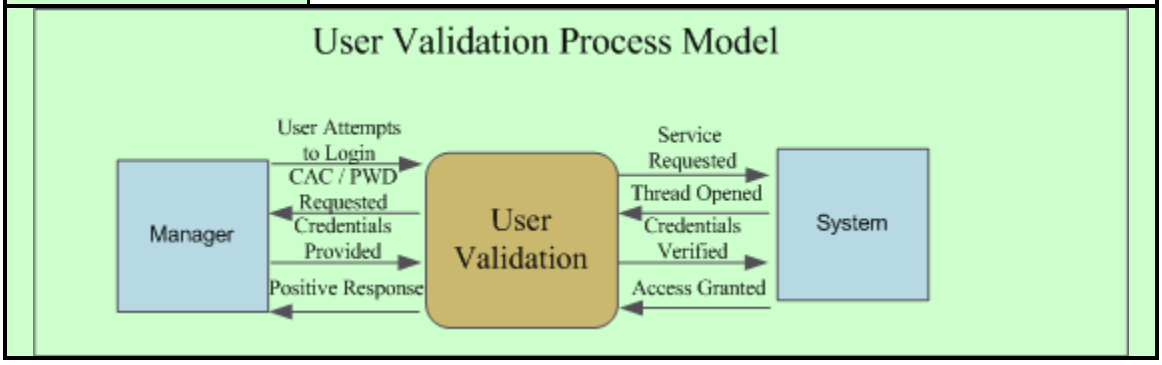


Management Subsystem

USE CASE NAME:	Ensure that user credentials are verified by use of CAC or strong password during login process	**USE CASE TYPE**
PRIORITY:	Medium	System Analysis
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	System	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employers Recruiters Candidates Managers	
DESCRIPTION:	This use case describes the system actions performed when a user logons to the system. Credentials will be verified with a Common Access Card (CAC) or strong password.	
PRE-CONDITION:		
TRIGGER:	A user attempts to logon to RBAS.	

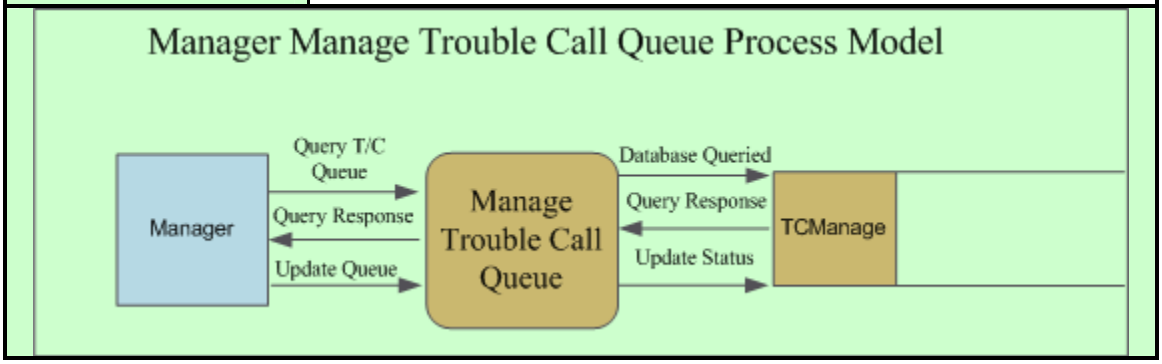
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: User attempts to logon to the RBAS system with either a Common Access Card (CAC) or Strong Password.	**Step 2**: Credentials of user are validated.
	Step 3: User is successfully logged on to RBAS.	

ALTERNATE COURSES:	**SR Step 4**: Incorrect password or invalid CAC is identified to user. **AA Step 3**: User reattempts to login with correct password/valid CAC.
CONCLUSION:	System validates user for his/her credentials.
POST-CONDITION:	
BUSINESS RULES	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS	
ASSUMPTIONS:	



Management Subsystem

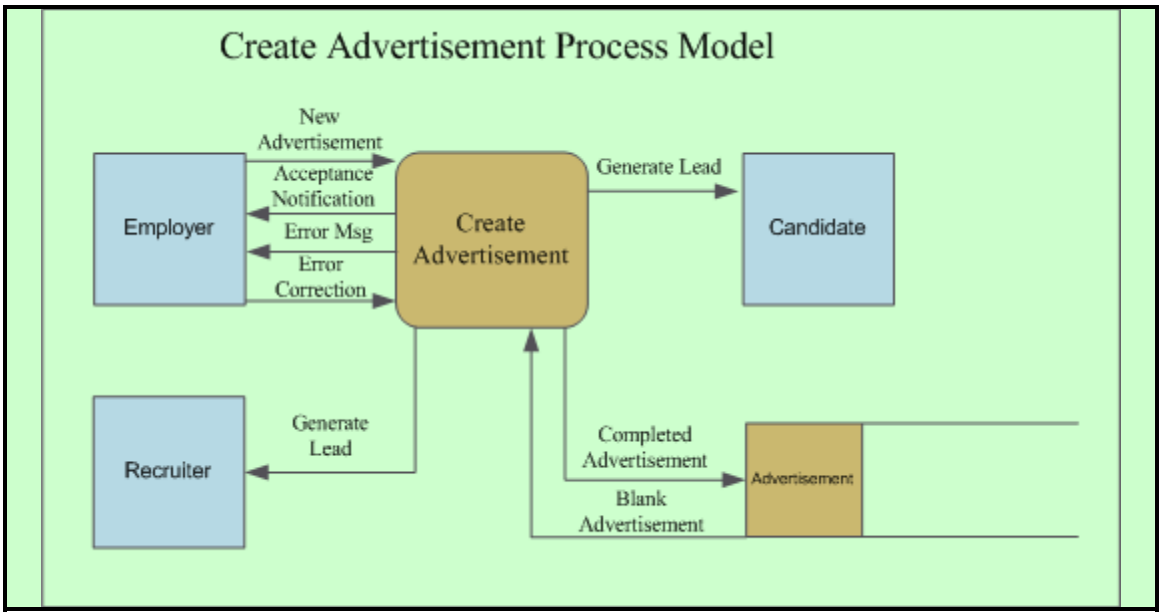
USE CASE NAME:	Manage Trouble Call Queue	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirements Analysis	
PRIMARY BUSINESS ACTOR	System Manager	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Employers Recruiters Candidates	
DESCRIPTION:	This Use Case describes how managers will be able to view and manage all trouble calls submitted by users of the system.	
PRE-CONDITION:	An end user has submitted a trouble ticket.	
TRIGGER:	System manager clicks “manage trouble tickets”.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: System manager clicks “manage trouble tickets”.	**Step 2**: System displays listing of all trouble tickets in managers queue.
	Step 3: System manager takes necessary action to resolve trouble ticket.	
	Step 4: System manager deletes tickets that have been resolved.	**Step 5:** System updates database to remove resolved trouble tickets.
ALTERNATE COURSES:		
CONCLUSION:	System manager successfully manages tickets in trouble call queue.	
POST-CONDITION:		
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:		



APPENDIX E. EMPLOYER USE CASES

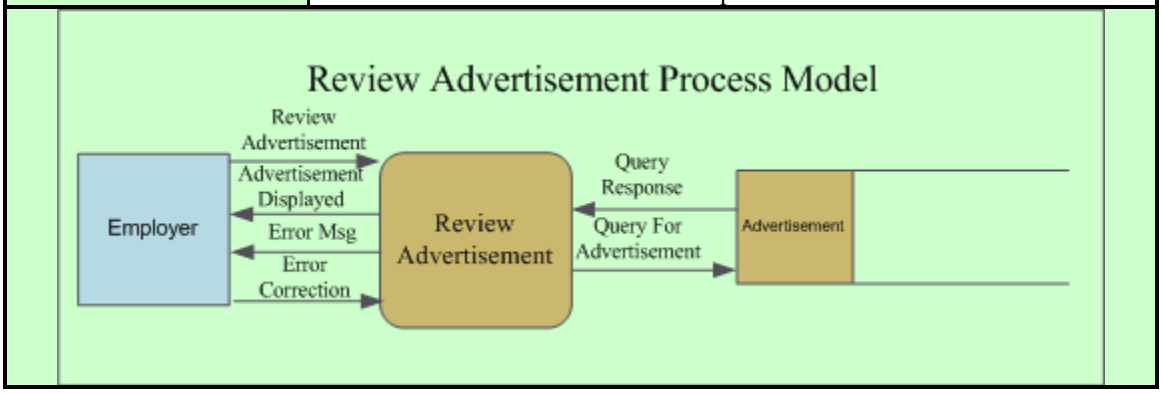
Employer Subsystem

USE CASE NAME:	Create Advertisement		**USE CASE TYPE** System Analysis
PRIORITY:	High		
SOURCE:	Requirement		
PRIMARY BUSINESS ACTOR:	Employer		
OTHER PARTICIPATING ACTORS:	Candidate Recruiter		
DESCRIPTION:	This use-case describes the action of manually inputting a new billet/advertisement into the system to be viewed by potential candidates.		
PRE-CONDITION:	Employer must have the proper roles to be able to complete this use-case.		
TRIGGER:	This use case is initiated when an Employer with roles clicks “Create Advertisement”		
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**	
	Step 1: Employer with roles clicks “Create Advertisement”	**Step 2**: Screen with blank advertisement template appears for employer to enter information about billet.	
	Step 3: Employer completes form and clicks “submit” to input information into table.	**Step 4**: Inputs are validated on client side for correct type.	
		Step 5: Inputs are added to billet table.	
	Step 6: Employer receives message that billet has been successfully added.		
	Step 7: Employer is provided the option to add another billet, or to return to the main menu.		
		Step 8: System generates email to all subscribers with ties to this billet.	
ALTERNATE COURSES:	On Step 6, if there is any error in adding the record to the table, a message will display that billet was NOT added.		
CONCLUSION:	This use case concludes when the employer receives a confirmation that the billet was successfully entered.		
POST-CONDITION:	User is returned to portal homepage.		
BUSINESS RULES			
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS			
ASSUMPTIONS:	User must have access to NMCI compliant web browser.		


Create Advertisement Process Model
New Advertisement
Acceptance Notification
Error Msg
Error Correction
Employer
Create Advertisement
Generate Lead
Candidate
Recruiter
Generate Lead
Completed Advertisement
Blank Advertisement
Advertisement

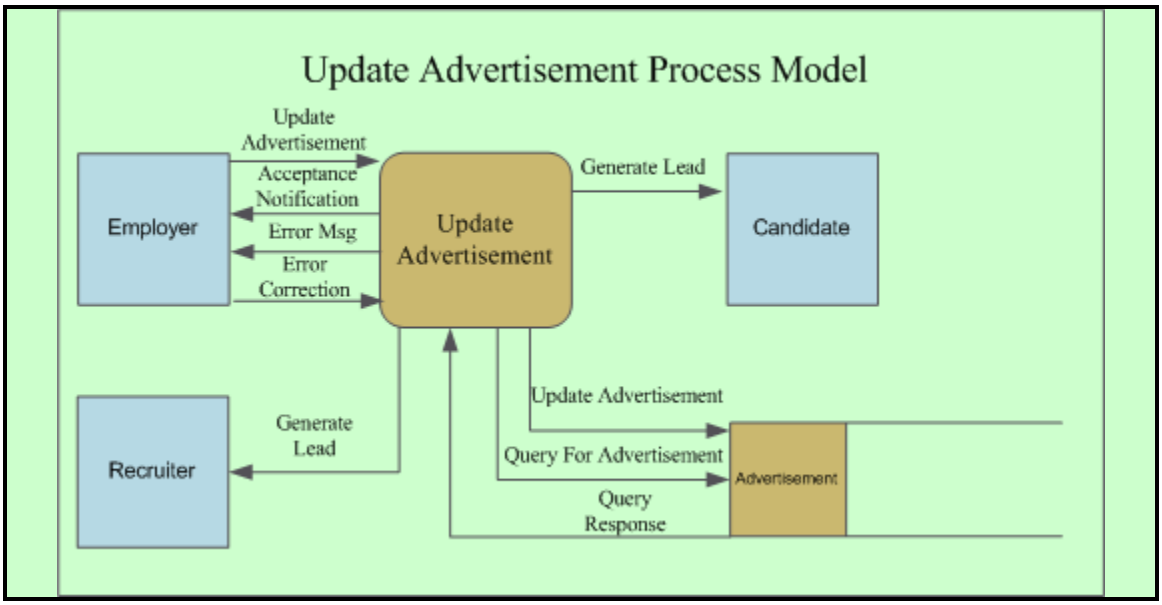
Employer Subsystem

USE CASE NAME:	Review Advertisement	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use-case describes the action of reviewing a manually inputted billet/advertisement in the system.	
PRE-CONDITION:	Employer must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when an Employer with roles clicks "Review Advertisement"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Employer with roles clicks "Review Advertisement"	**Step 2**: Screen with listing of all current advertisements appears for the employer to select which one to review.
	Step 3: Employer selects which billet to review	**Step 4**: Details of selected billet are displayed.
		Step 5: Employer is given the option to "Update" billet/advertisement or return to previous page.
ALTERNATE COURSES:		
CONCLUSION:	This use case concludes when the employer can view the details of a requested billet.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



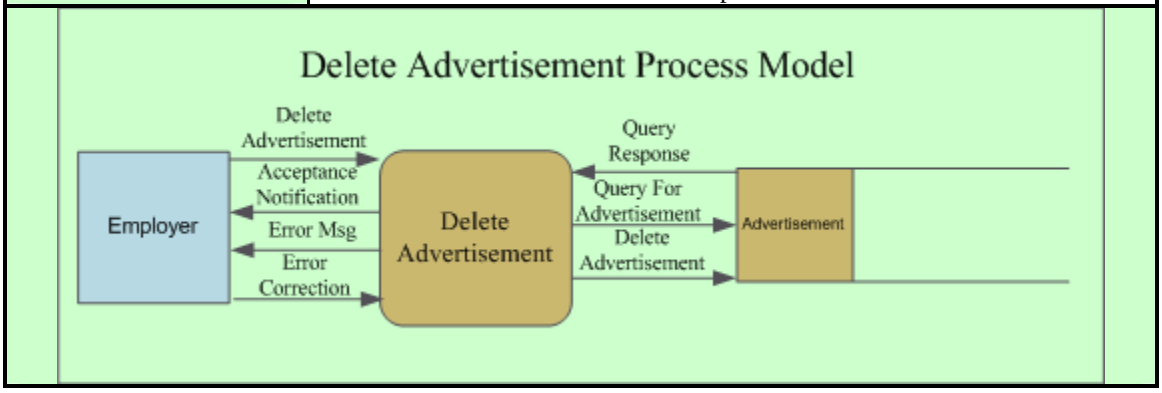
Employer Subsystem

USE CASE NAME:	Update Advertisement	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Reservist Recruiter	
DESCRIPTION:	This use-case describes the action of updating a manually inputted billet/advertisement in the system.	
PRE-CONDITION:	Employer must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when an Employer with roles clicks "Update Advertisement"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Employer with roles clicks "Update Advertisement"	**Step 2**: Screen with listing of all current advertisements appears for the employer to select which one to update.
	Step 3: Employer selects which billet to update.	**Step 4**: System displays all billet information from billet table.
	Step 5: Employer makes necessary updates to billet fields.	**Step 6**: System validates information on client side and updates billet table.
	Step 7: Employer receives confirmation on screen that the billet was updated.	**Step 8**: System generates email to all subscribers with ties to this billet.
ALTERNATE COURSES:		
CONCLUSION:	This use case concludes when the employer receives confirmation that the billet being edited was updated.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Update Advertisement Process Model
Update Advertisement
Acceptance Notification
Error Msg
Error Correction
Employer
Update Advertisement
Generate Lead
Candidate
Recruiter
Generate Lead
Update Advertisement
Query For Advertisement
Query Response
Advertisement

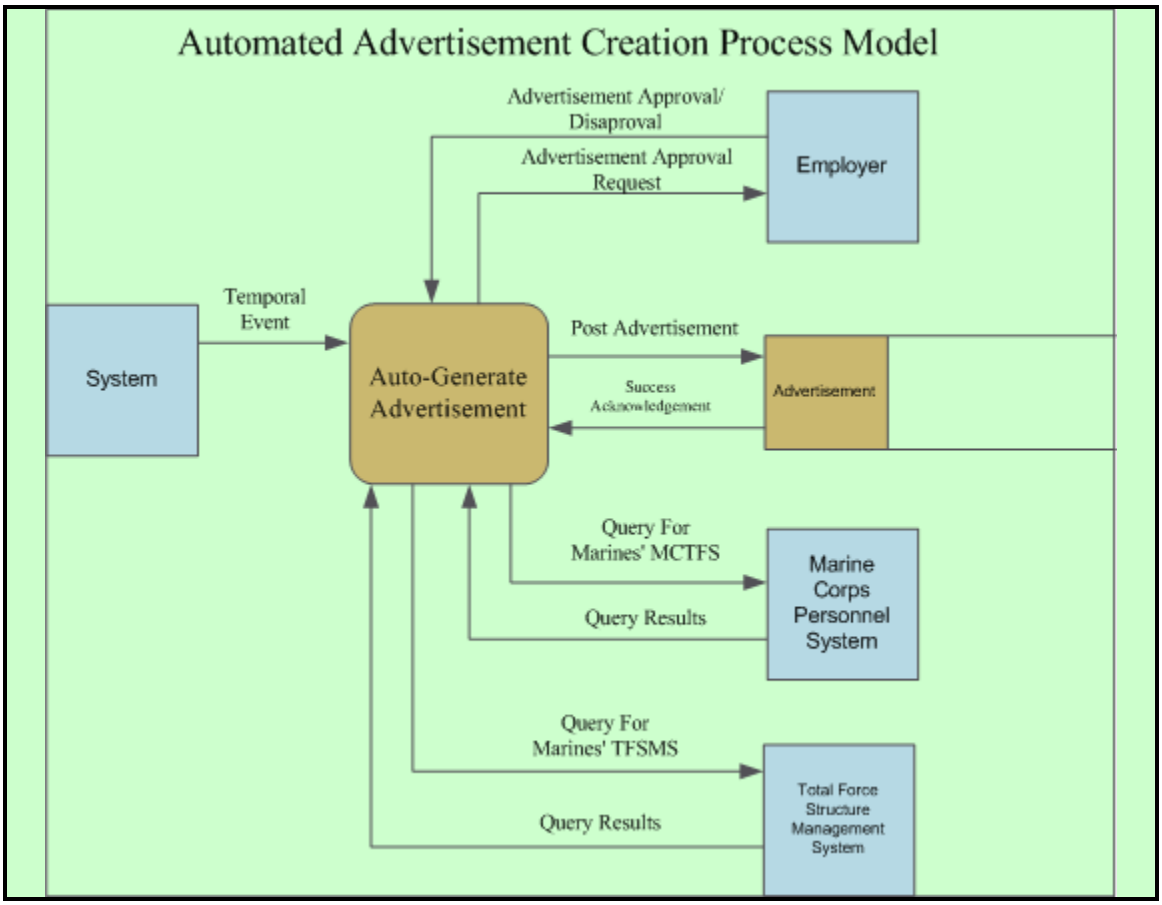
Employer Subsystem

USE CASE NAME:	Delete Advertisement	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Reservist Recruiter	
DESCRIPTION:	This use-case describes the action of deleting a manually inputted billet/advertisement from the system.	
PRE-CONDITION:	Employer must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when an Employer with roles clicks "Delete Advertisement"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Employer with roles clicks "Delete Advertisement"	**Step 2**: Screen with listing of all current advertisements appears for the employer to select.
	Step 3: Employer selects appropriate "check boxes" and presses delete button.	**Step 4**: Window asking "Are you sure?" you want to delete the following billet(s) is displayed.
	Step 5: Employer checks yes or no.	**Step 6**: Billet(s) is/are deleted from the billet table.
	Step 7: Employer receives message that billet(s) has been successfully deleted.	
		Step 8: System generates email to all subscribers with ties to this billet.
ALTERNATE COURSES:		
CONCLUSION:	This use case concludes when the employer receives a confirmation that the billet was successfully deleted.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



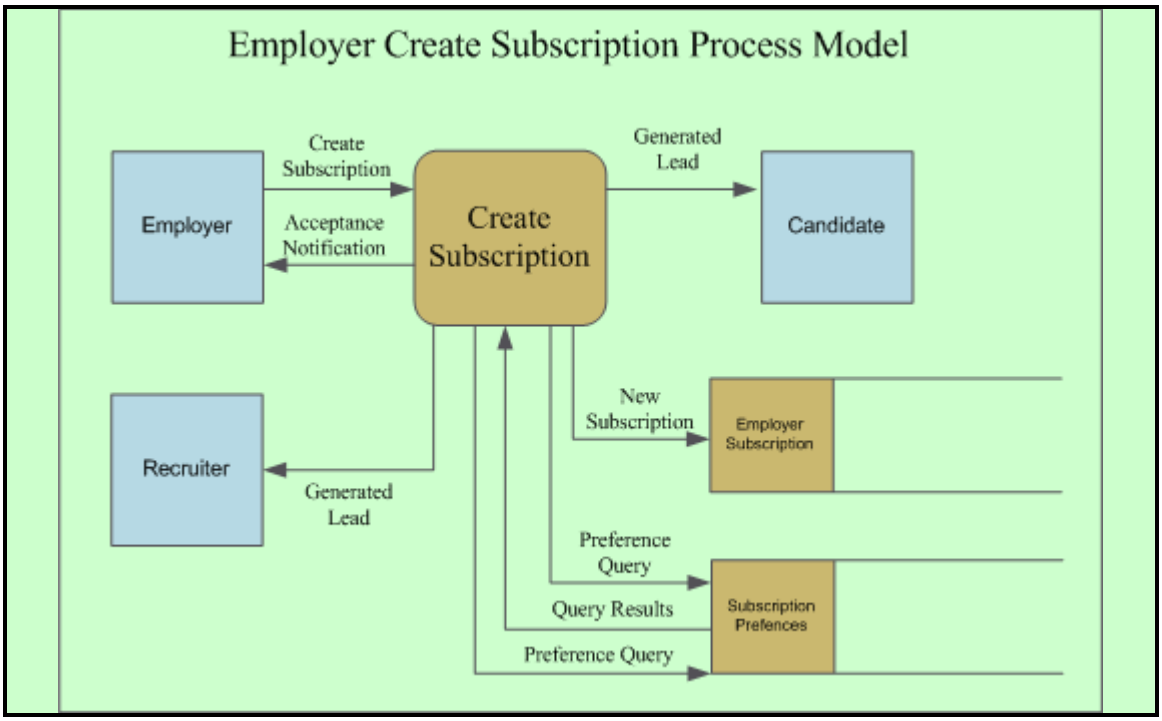
Employer Module

USE CASE NAME:	Create Automated Advertisement	**USE CASE TYPE** System Analysis
PRIORITY:	High	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer System	
OTHER PARTICIPATING ACTORS:	External Data Sources (MCTFS, TFSMS) Recruiter Candidate	
DESCRIPTION:	This use case describes how the system generates billet advertisements automatically by comparing MCTFS O/H data versus T/O data.	
PRE-CONDITION:	External data sources (MCTFS/TFSMS) must be functioning correctly.	
TRIGGER:	This use case is initiated temporally (weekly) at a specified time.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: System initiates transaction at specified time to automatically generate advertisements.	**Step 2**: System queries MCTFS for on hand strength by Reporting Unit Code (RUC).
		Step 3: System queries TFSMS for billet structure listing by RUC.
		Step 4: MCTFS and TFSMS data are compared against one another to determine what billets are vacant, as well as calculated losses (Pending EAS, Transfer to FMCR)
		Step 5: Automated Advertisements are generated for current/future vacant billets.
		Step 6: Notification (email/portal) is delivered to each Employer telling them new advertisements have been generated.
	Step 7: Employer has 7 days to validate system generated billets prior to them automatically posting to RDOL.	
ALTERNATE COURSES:	Alternatively, this report could query data strictly based off of Billet Identification Code, if it were tied in MCTFS to a Marine's SSN.	
CONCLUSION:	This use case concludes when the employer receives a confirmation that the automated billets were successfully created.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Automated Advertisement Creation Process Model
Advertisement Approval/ Disaproval
Advertisement Approval Request
Employer
Temporal Event
System
Auto-Generate Advertisement
Post Advertisement
Success Acknowledgement
Advertisement
Query For Marines' MCTFS
Query Results
Marine Corps Personnel System
Query For Marines' TFSMS
Query Results
Total Force Structure Management System

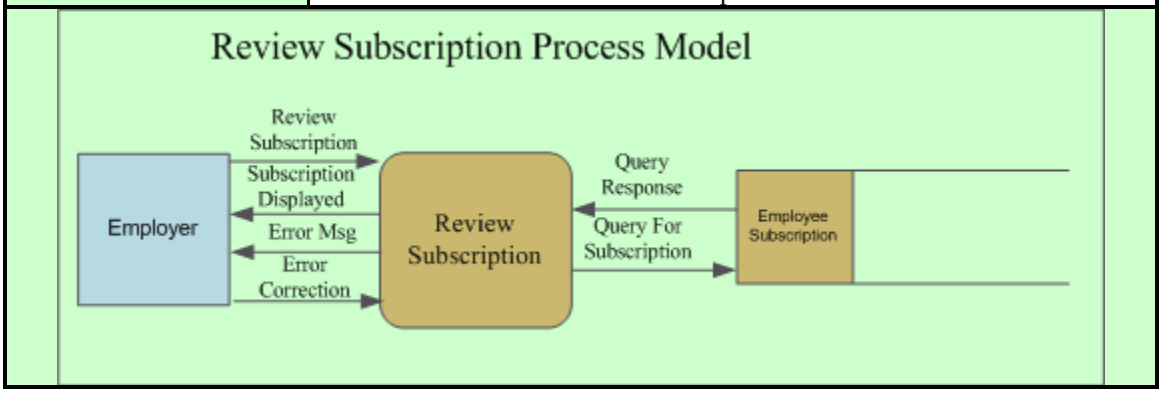
Employer Module

USE CASE NAME:	Create subscription to automated candidate search services	**USE CASE TYPE**
PRIORITY:	Medium	System Analysis
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Candidate	
DESCRIPTION:	This Use Case describes how an Employer can create a subscription to automatically receive updates (email or notification on portal) if new candidates that fit his or her criteria (geo loc, dates, MOS) have recently registered, posted new or updated information or deleted items from their profile.	
PRE-CONDITION:	The employer is registered Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	This use case is initiated when an Employer with roles clicks "Create Subscription"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Employer with roles clicks "Create Subscription"	**Step 2**: Screen with subscription criteria (MOS, GeoLoc, Dates) appears for employer to select or input.
	Step 3: Employer completes form and clicks submit.	**Step 4**: The system verifies the information.
		Step 5: If the information is correct, the system accepts the subscription.
		Step 6: The system places the employer and their search criteria in its subscription queue.
		Step 7: Leads are generated for candidates that have subscribed to employer search services.
		Step 8: The system compares the criteria of newly posted, updated or deleted candidates versus the criteria posted by subscribers.
ALTERNATE COURSES:		
CONCLUSION:	This use case concludes when the employer receives a confirmation that the subscription has been created successfully.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Employer Create Subscription Process Model
Employer
Create Subscription
Acceptance Notification
Create Subscription
Generated Lead
Candidate
Recruiter
Generated Lead
New Subscription
Employer Subscription
Preference Query
Query Results
Preference Query
Subscription Prefences

Employer Subsystem

USE CASE NAME:	Review subscription to automated candidate search services	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Candidate Recruiter	
DESCRIPTION:	This Use Case describes how an employer can review their subscriptions without making any modifications to them.	
PRE-CONDITION:	Employer must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when an Employer with roles clicks "Review Subscription"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Employer with roles clicks "Review Subscriptions"	**Step 2**: The system will query the database to retrieve the employer's subscription information.
		Step 3: Once an active record is found, the system will display the retrieved subscription information.
ALTERNATE COURSES:	**SR Step 3:** The system is unable to locate a subscription for the employer.	
	SR Step 4: The system displays an error message that informs the employer that he or she has no active subscriptions.	
CONCLUSION:	This use case concludes when the employer can review their current subscription(s).	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



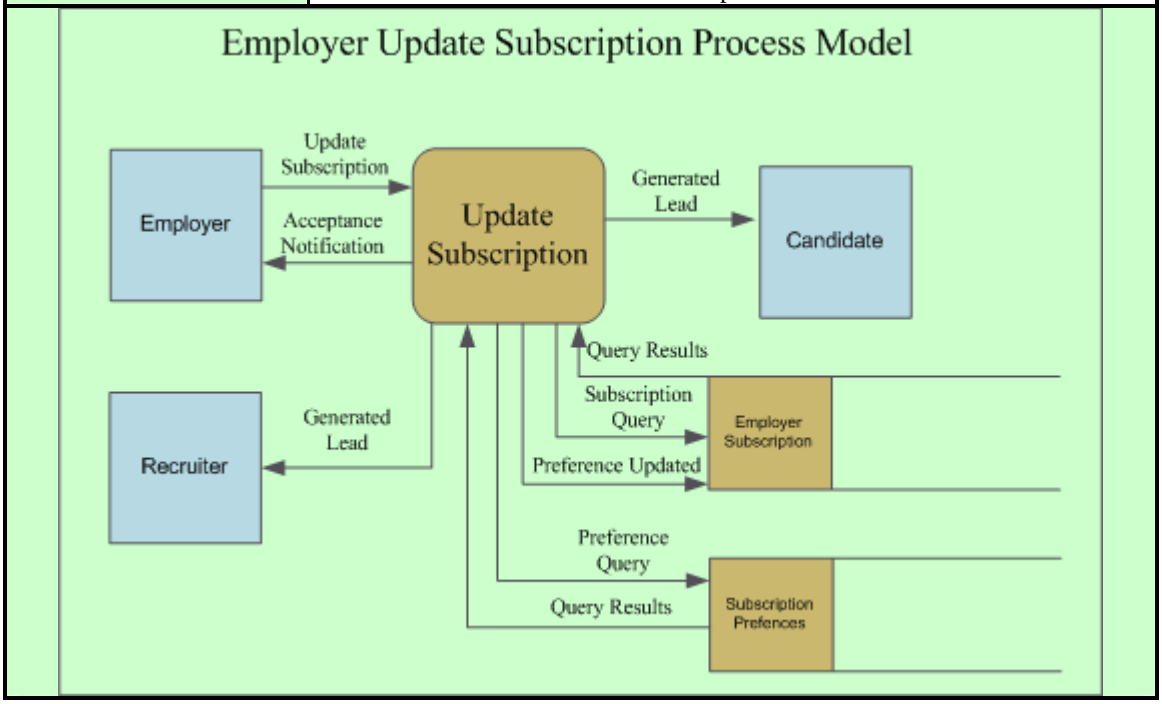
Employer Subsystem

USE CASE NAME:	Update subscription to automated candidate search services	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Candidate Recruiter	
DESCRIPTION:	This Use Case describes how an employer can update their active subscriptions.	
PRE-CONDITION:	Employer must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when an Employer with roles clicks "Update Subscription"	

TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Employer with roles clicks "Update Subscriptions"	**Step 2**: The system will query the database to retrieve the employer's subscription information.
		Step 3: Once an active record is found, the system will prompt the employer to verify if the information retrieved is the subscription they want to update.
	Step 4: The employer verifies the information and acknowledges by pressing continue.	**Step 5:** The system then opens a subscription edit window and populates the fields with the retrieved information and prompts the user to update the subscription.
	Step 6: The employer updates the information and hits "submit" when complete.	**Step 7:** The system error checks the information, if the information is correct the update is accepted, acknowledged and the database is updated.
		Step 8: The system places the employer and their search criteria in its subscription queue.
		Step 9: Leads are generated for candidates that have subscribed to employer search services.
		Step 10: The system compares the billet identifiers of newly posted, updated or deleted jobs versus the criteria posted by subscribers.
		Step 11: If the search criteria matches, an email is generated and sent to the employer or his portal is updated. (which ever method is selected)

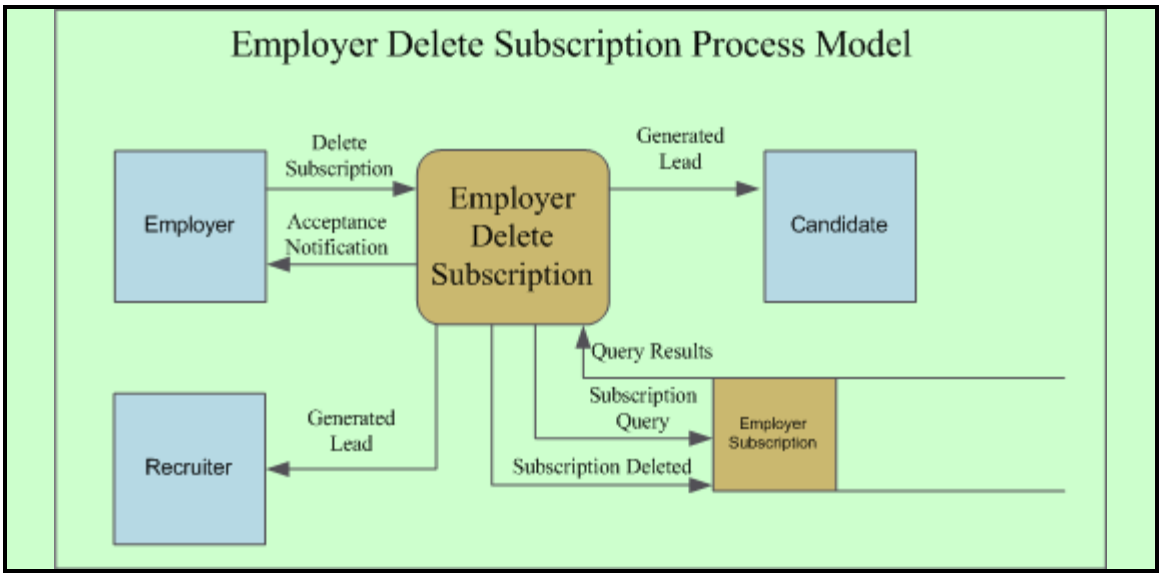
ALTERNATE COURSES:	**SR Step 3:** The system is unable to locate a subscription for the employer.

	SR Step 4: The system displays an error message that informs the employer that he or she has no active subscriptions.
CONCLUSION:	This use case concludes when the employer can review their current subscription(s).
POST-CONDITION:	User is returned to portal homepage.
BUSINESS RULES	
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS	
ASSUMPTIONS:	User must have access to NMCI compliant web browser.



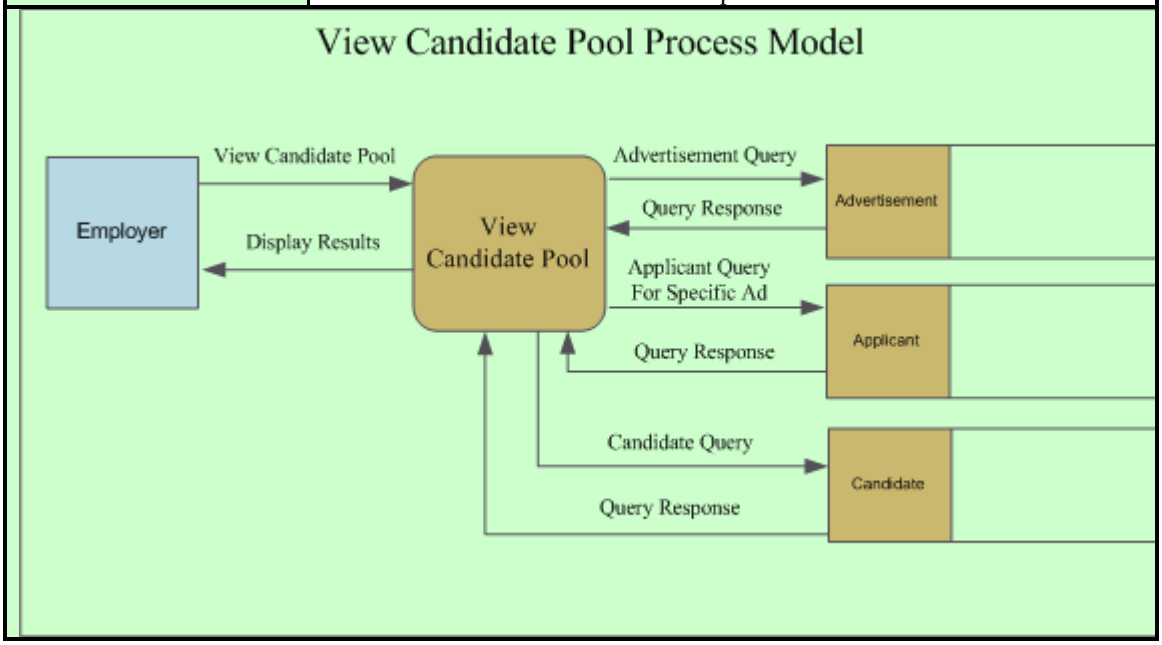
Employer Subsystem

USE CASE NAME:	Delete subscription to automated candidate search services	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Candidate Recruiter	
DESCRIPTION:	This Use Case describes how an Employer can delete an active subscription.	
PRE-CONDITION:	You must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when an Employer with roles clicks "Delete Subscription"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer selects "delete" subscription from menu of choices.	**Step 2**: The system will query the database to retrieve the employer's subscription information.
		Step 3: Once an active record is found, the system will prompt the employer to verify if the information retrieved is the subscription they want deleted.
	Step 4: The employer verifies the information and acknowledges by pressing continue.	**Step 5:** The system then prompts the employer if they are certain they want to cancel this subscription.
	Step 6: The employer acknowledges his or her approval by clicking "yes"	**Step 7:** The system receives the response and deletes the subscription from the database
		Step 8: A success message is generated and displayed to the employer.
ALTERNATE COURSES:	**SR Step 3:** The system is unable to locate a subscription for the employer.	
	SR Step 4: The system displays an error message that informs the employer that he or she has no active subscriptions.	
	AA Step 6: The employer declines to delete subscription.	
	SR Step 7: The system acknowledges the negative response and deletes the transaction.	
	SR Step 8: The system display successful cancellation message to user.	
CONCLUSION:	This use case concludes when the employer receives a confirmation that the subscription was successfully deleted.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Employer Delete Subscription Process Model
Employer
Delete Subscription
Acceptance Notification
Employer Delete Subscription
Generated Lead
Candidate
Query Results
Subscription Query
Employer Subscription
Subscription Deleted
Recruiter
Generated Lead

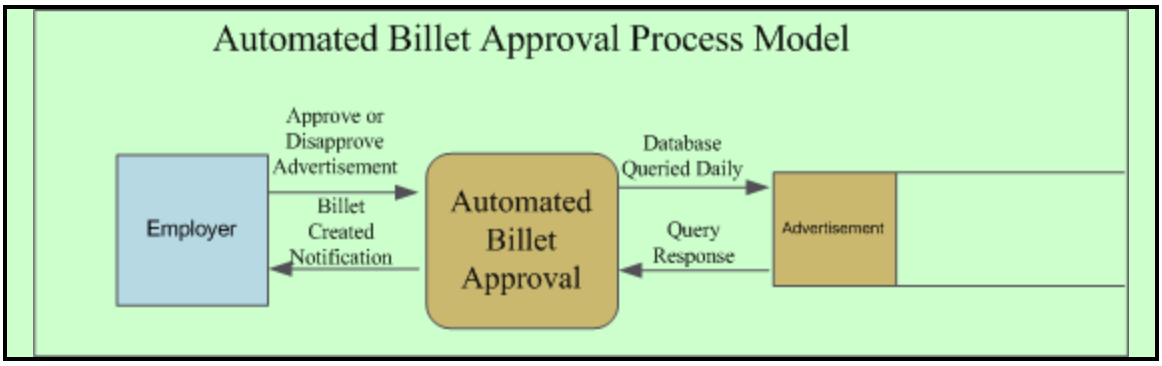
Employer Subsystem

USE CASE NAME:	View current application pool	**USE CASE TYPE** System Analysis
PRIORITY:	Low	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Candidate	
DESCRIPTION:	This use case describes how an employer can view all leads/applications that have been submitted for billets in their purview.	
PRE-CONDITION:	Billet/Advertisement must have had at least one application.	
TRIGGER:	This use case is initiated when an Employer with roles clicks "View current applications"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer selects "applicants" from an active advertisement.	**Step 2**: The system will query the database to retrieve the applicant queue for the selected advertisement.
		Step 3: The system will display all activity associated with that particular advertisement.
ALTERNATE COURSES:		
CONCLUSION:	This use case concludes when the employer can view all current applications that are pertinent to his/her BIC/RUC listings.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



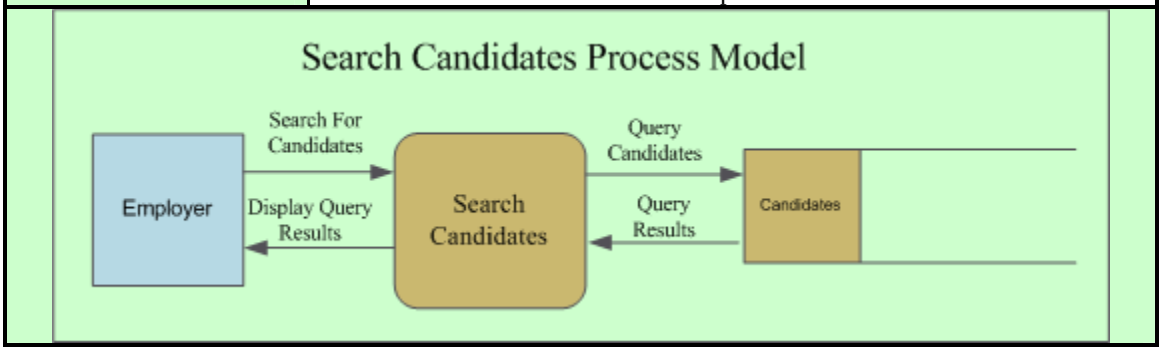
Employer Subsystem

USE CASE NAME:	Verify validity of automated billet generation	**USE CASE TYPE**
PRIORITY:	Medium	System Analysis
SOURCE:	System Requirement	
PRIMARY BUSINESS ACTOR	Employer	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Recruiter Candidate	
DESCRIPTION:	This Use Case describes how Employers verify the billets generated automatically by the RBAS system.	
PRE-CONDITION:	The Employer is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The Use Case is initiated when the RBAS system notifies the Employer that new billets generated automatically are waiting in the approval queue.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 2: The Employer selects "review new billets advertisements" from their portal.	**Step 1**: The system sends an alert and an email to the employer informing them that new billets are in the approval queue.
	Step 3: The Employer views the new billet advertisements in the queue for validity and approves the billet by selecting "accept" or by disapproving them by selecting "reject".	**Step 4:** The system publishes the advertisement if it is accepted by the reviewing authority. If the billet is rejected it is forwarded to the RUC manager.
		Step 5: The system sends notifications to all users that have signed up to receive billet notifications.
ALTERNATE COURSES:		
CONCLUSION:	The Employer approves advertisements that were generated automatically by the system.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Automated Billet Approval Process Model
Employer
Approve or Disapprove Advertisement
Billet Created Notification
Automated Billet Approval
Database Queried Daily
Query Response
Advertisement

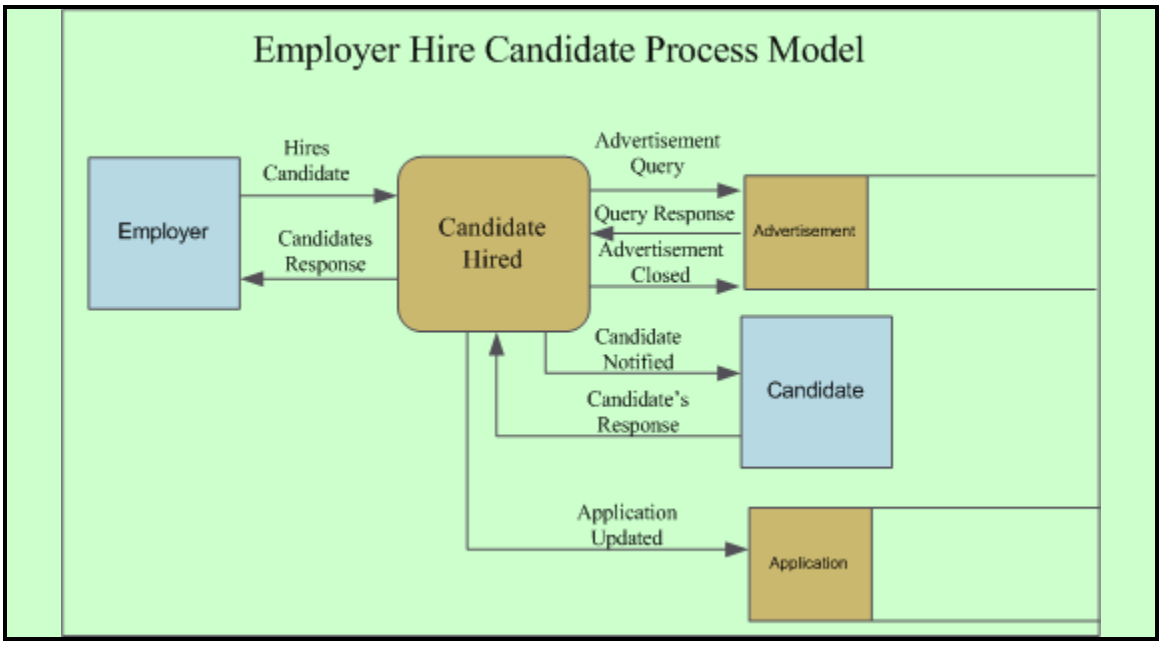
Employer Subsystem

USE CASE NAME:	Manually search all Candidates by avenue of interest (MOS/Dates).	**USE CASE TYPE** System Analysis
PRIORITY:	High	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Candidate	
DESCRIPTION:	This Use Case describes how an Employer can search for interested Candidates that match their search criteria.	
PRE-CONDITION:	You must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when an Employer with roles clicks "Hire Candidate"	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Employer enters search criteria into query form and clicks "submit".	**Step 2**: System verifies the data entered into search form.
		Step 3: If the information is complete, the system accepts the request and conducts the search.
		Step 4: System displays listing of candidates matching search criteria.
	Step 5: Employer can then click on each candidate to get more details (resume).	
ALTERNATE COURSES:		
CONCLUSION:	This use case concludes when the employer inputs search criteria and receives an accurate listing of candidates meeting those criteria.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



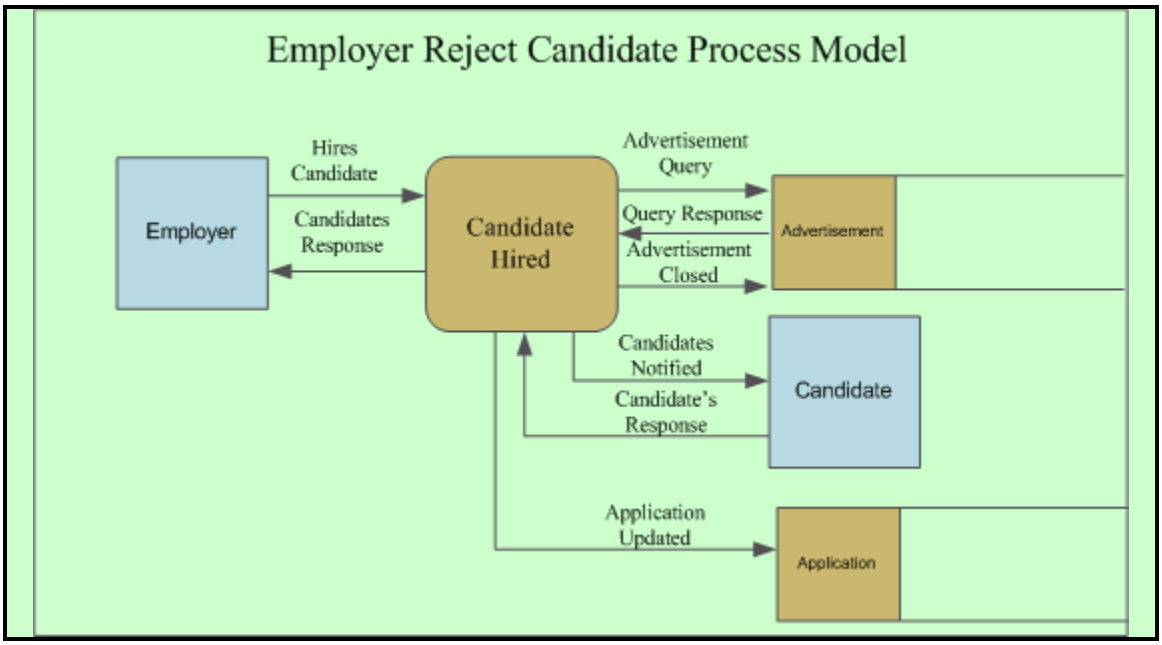
Employer Subsystem

USE CASE NAME:	Hire Candidate		**USE CASE TYPE** System Analysis
PRIORITY:	Medium		
SOURCE:	Requirement		
PRIMARY BUSINESS ACTOR:	Employer		
OTHER PARTICIPATING ACTORS:	Candidate Recruiter		
DESCRIPTION:	This use case describes how an employer selects a particular candidate for a billet.		
PRE-CONDITION:	You must have the proper roles to be able to complete this use-case.		
TRIGGER:	This use case is initiated when an Employer with roles clicks “Hire Candidate”		
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**	
	Step 1: Employer with roles clicks “Hire Candidate”	**Step 2**: Screen appears with listing of all applicants for a particular billet.	
	Step 3: Employer places check box next to candidate to hire.	**Step 4**: Confirmation (Are you sure you want to hire Candidate XXX for BIC XXX?).	
		Step 5: Once approved, system sends notifications (email/portal) to candidate that was selected and candidates not selected.	
		Step 6: System generates notification to all subscribers with ties to this billet.	
ALTERNATE COURSES:			
CONCLUSION:	This use case concludes when the employer receives a confirmation that candidate was hired and successfully notified.		
POST-CONDITION:	User is returned to portal homepage.		
BUSINESS RULES			
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS			
ASSUMPTIONS:	User must have access to NMCI compliant web browser.		


Employer Hire Candidate Process Model
Employer
Hires Candidate
Candidates Response
Candidate Hired
Advertisement Query
Query Response
Advertisement Closed
Advertisement
Candidate Notified
Candidate's Response
Candidate
Application Updated
Application

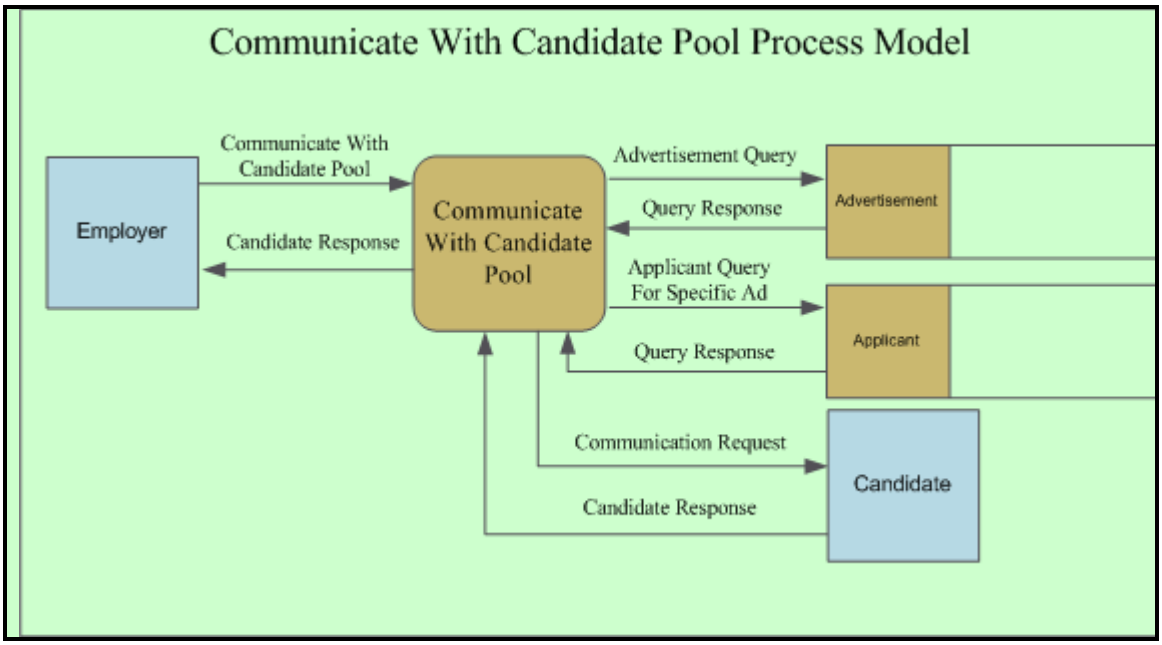
Employer Subsystem

USE CASE NAME:	Reject Candidate		**USE CASE TYPE** System Analysis
PRIORITY:	Medium		
SOURCE:	Requirement		
PRIMARY BUSINESS ACTOR:	Employer		
OTHER PARTICIPATING ACTORS:	Candidate Recruiter		
DESCRIPTION:	This use case describes how an employer rejects a particular candidate for a billet.		
PRE-CONDITION:	You must have the proper roles to be able to complete this use-case.		
TRIGGER:	This use case is initiated when an Employer with roles clicks "Hire Candidate"		
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**	
	Step 1: Employer with roles clicks "Hire Candidate"	**Step 2**: Screen appears with listing of all applicants for a particular billet.	
	Step 3: Employer places check box next to candidate to hire.	**Step 4**: Confirmation (Are you sure you want to hire Candidate XXX for BIC XXX?).	
		Step 5: Once approved system sends notifications (email/portal) to candidate that was selected and candidates not selected.	
		Step 6: System generates notification to all subscribers with ties to this billet.	
ALTERNATE COURSES:	This process is conducted simultaneously with "Hire Candidate". Upon a candidate being selected and hired for a billet, all other candidates are rejected.		
CONCLUSION:	This use case concludes when the employer receives a confirmation that candidate was hired and candidates which were not hired were successfully notified.		
POST-CONDITION:	User is returned to portal homepage.		
BUSINESS RULES			
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS			
ASSUMPTIONS:	User must have access to NMCI compliant web browser.		


Employer Reject Candidate Process Model
Employer
Hires Candidate
Candidates Response
Candidate Hired
Advertisement Query
Query Response
Advertisement Closed
Advertisement
Candidates Notified
Candidate's Response
Candidate
Application Updated
Application

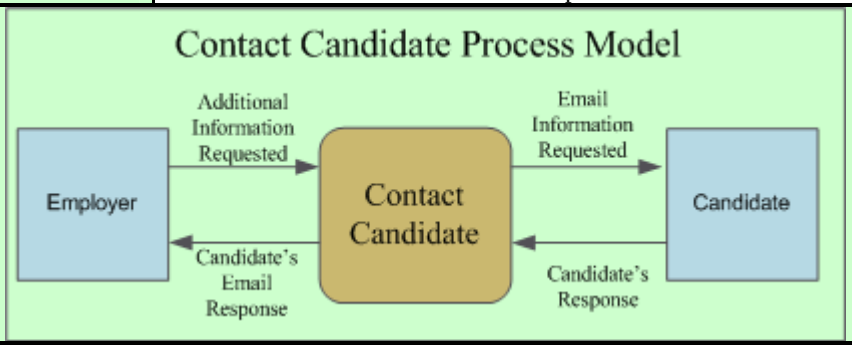
Employer Subsystem

USE CASE NAME:	Communicate with candidate pool	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Candidate	
DESCRIPTION:	This use case describes how an Employer can conduct mass communication with all candidates applying for a specific billet.	
PRE-CONDITION:	Billet must have at least one applicant to create an applicant pool	
TRIGGER:	This use case is initiated when an Employer with roles clicks "Contact applicant pool" for a specific billet.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer selects "applicants" from an active advertisement.	**Step 2**: The system will query the database to retrieve the applicant queue for the selected advertisement.
	Step 3: The employer selects "contact all applicants" for specified billet.	**Step 4:** The system will bring up a subject and free text form box for information to be entered.
	Step 5: The employer enters information into form and clicks submit.	**Step 6:** The system generates notifications/emails (based on preferences) passing information entered by employer.
CONCLUSION:	This use case concludes when the candidate has been notified (portal/email) by the employer.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Communicate With Candidate Pool Process Model
Employer
Communicate With Candidate Pool
Candidate Response
Communicate With Candidate Pool
Advertisement Query
Query Response
Advertisement
Applicant Query For Specific Ad
Query Response
Applicant
Communication Request
Candidate Response
Candidate

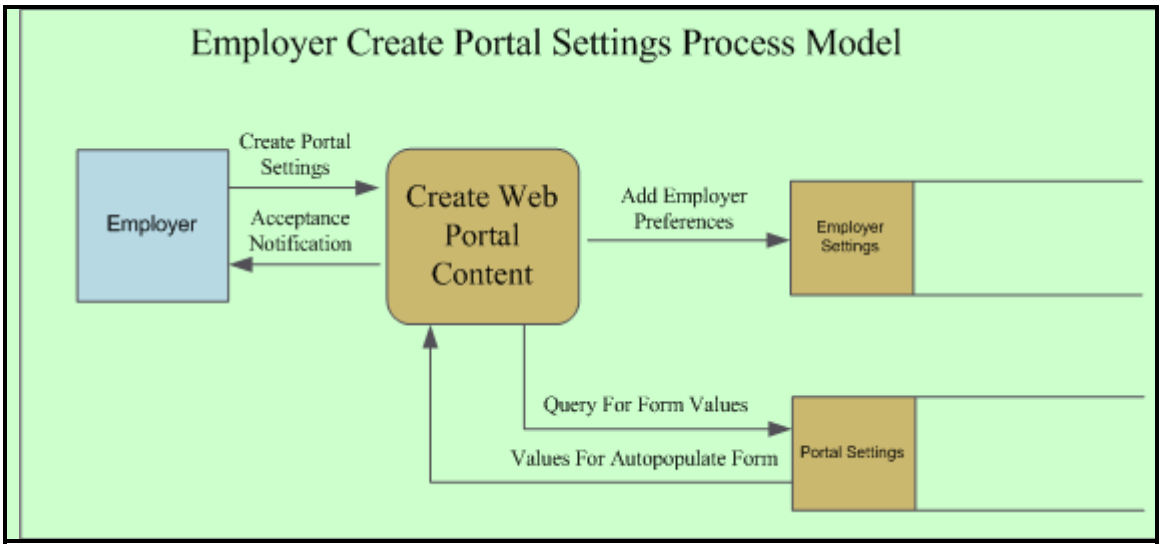
Employer Subsystem

USE CASE NAME:	Communicate with potential candidates	**USE CASE TYPE**
PRIORITY:	Medium	System Analysis
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Candidate	
DESCRIPTION:	This use case describes how an Employer can conduct mass communication with all candidates who might be interested in a specific billet. (IE: New billet for an 0659 opens up, employer can communicate with all RBAS users with 06XX MOS.)	
PRE-CONDITION:		
TRIGGER:	This use case is initiated when an Employer with roles clicks "Contact candidates".	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer selects "Contact candidates" within employer module.	**Step 2**: The system will display an addressee block and free text form block to input the message.
	Step 3: The employer then selects addressees by criteria (rank, geo loc) and inputs message in message block.	**Step 4:** The system transmits information to addressees.
CONCLUSION:	This use case concludes when the candidates receive communication from employer.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



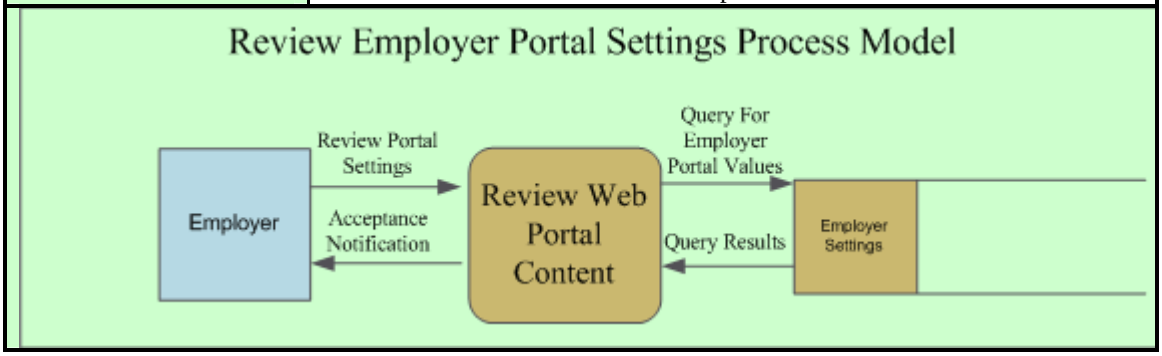
Employer Subsystem

USE CASE NAME:	Create Employer Content for Portal	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Employer	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how an Employer can create a personalized web portal upon initial login to the Reserve Billet Advertisement System.	
PRE-CONDITION:	The employer is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The employer logs into personal portal for the first time.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer logs on to RBAS for the first time.	**Step 2**: The system prompts the employer to select what content they want to add to their personal portal. The user will be provided with a list of alternatives to select from.
	Step 3: The employer selects the services that he or she wants to populate their personal portal with. When the employer is done choosing, he or she hits "submit" to transmit settings back to RBAS.	**Step 4:** RBAS acknowledges the request, and updates the employer's preferences queue and updates the database.
		Step 5: The system sends a positive response acknowledging changes and instructs user to log off and back on to view the changes.
ALTERNATE COURSES:	None	
CONCLUSION:	The employer personalizes their web portal.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Employer Create Portal Settings Process Model
Employer
Create Portal Settings
Acceptance Notification
Create Web Portal Content
Add Employer Preferences
Employer Settings
Query For Form Values
Values For Autopopulate Form
Portal Settings

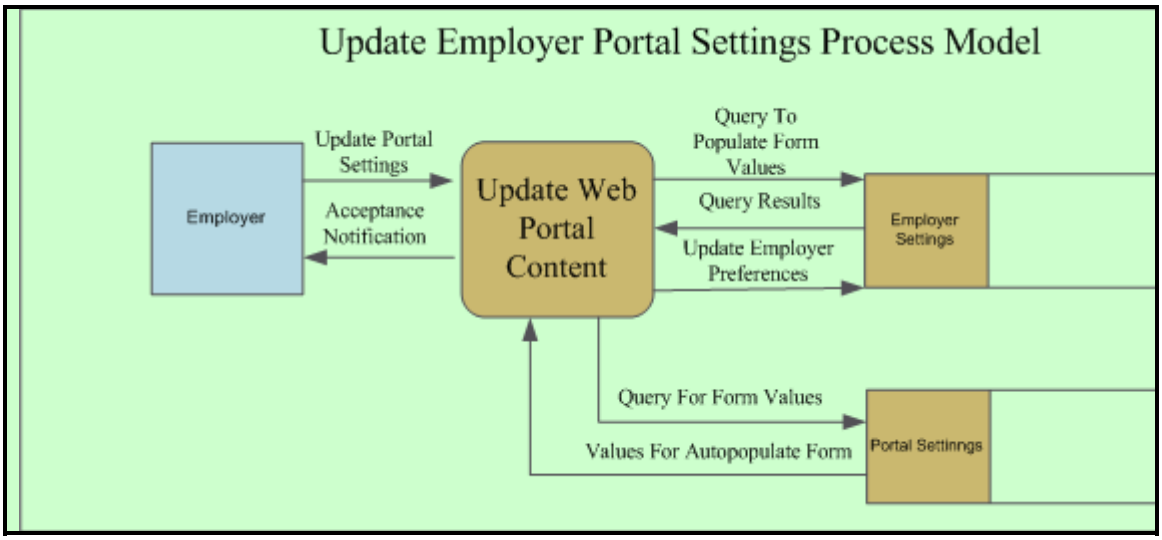
Employer Subsystem

USE CASE NAME:	Review Employer Content for Portal	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Employer	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how an employer can review the customizable information contained within their personal web portal (ie RSS feeds, content)	
PRE-CONDITION:	The employer is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The employer reviews their personal settings within their RBAS personal portal.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer selects "view" portal settings from menu of choices.	**Step 2**: The system queries the database for the employer's currents settings.
		Step 3: If the employer has personal settings, RBAS displays the queries results.
ALTERNATE COURSES:	None	
CONCLUSION:	The employer reviews their personal web portal settings.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



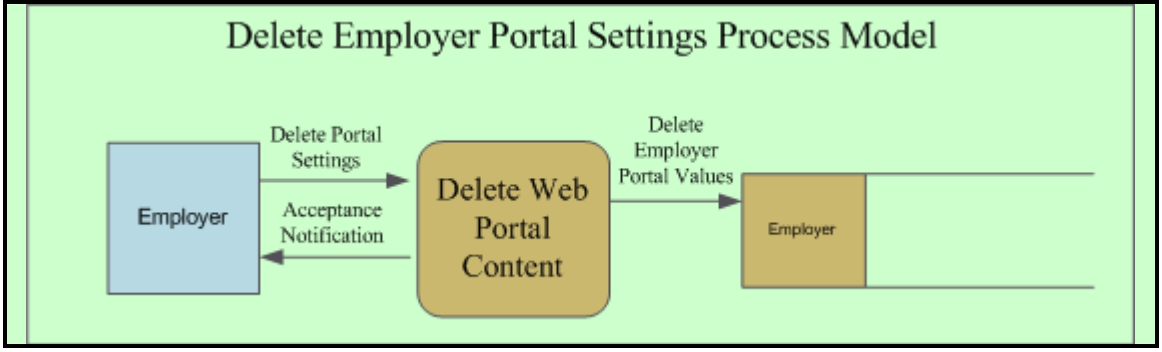
Employer Subsystem

USE CASE NAME:	Update Employer Web Portal Content	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Employer	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how an employer can update the customizable information contained within their personal web portal (ie RSS feeds, content)	
PRE-CONDITION:	The employer is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The employer updates their personal settings within their RBAS personal portal.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer selects "update" portal settings from menu of choices.	**Step 2**: The system queries the database, populates the list of alternatives with current settings.
		Step 3: The system prompts the employer to update their selections.
	Step 3: The employer selects the services that he or she wants to populate their personal portal with. When the employer is done modifying their settings he or she hits "submit" to transmit settings back to RBAS.	**Step 4:** RBAS acknowledges the request, and updates the employer's preferences queue and updates the database.
		Step 5: The system sends a positive response acknowledging the changes and instructs user to log off and back on to view the changes.
ALTERNATE COURSES:	None	
CONCLUSION:	The employer updates their personal web portal settings.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Update Employer Portal Settings Process Model
Employer
Update Portal Settings
Acceptance Notification
Update Web Portal Content
Query To Populate Form Values
Query Results
Update Employer Preferences
Employer Settings
Query For Form Values
Values For Autopopulate Form
Portal Settinngs

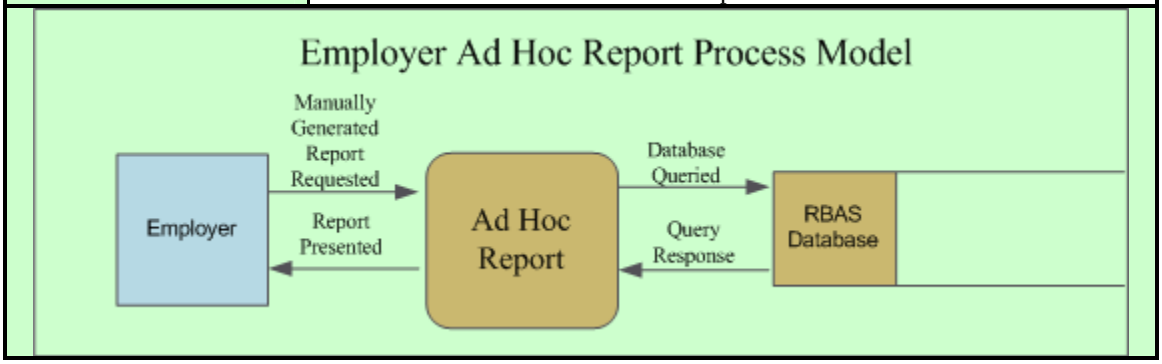
Employer Subsystem

USE CASE NAME:	Delete Employer Web Portal Content	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Employer	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how an employer can delete the customizable information contained within their personal web portal (ie RSS feeds, content)	
PRE-CONDITION:	The employer is registered Reserve Billet Advertisement System and has been assigned the appropriate level of access.	
TRIGGER:	The employer deletes their personal settings within their RBAS personal portal.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer selects "delete" portal settings from menu of choices.	**Step 2**: The system queries the database for the employer's currents settings.
		Step 3: If the employer has personal settings, RBAS displays the query results and prompts the user to verify that they want to delete these settings.
	Step 4: The employer acknowledges the system prompt.	**Step 5:** The system deletes the employer's personal settings and restores the system's default settings.
ALTERNATE COURSES:	**SR Step 3**: The employer does not have any portal settings and the system displays an error message and transaction is canceled.	
CONCLUSION:	The employer deletes their personal web portal settings.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



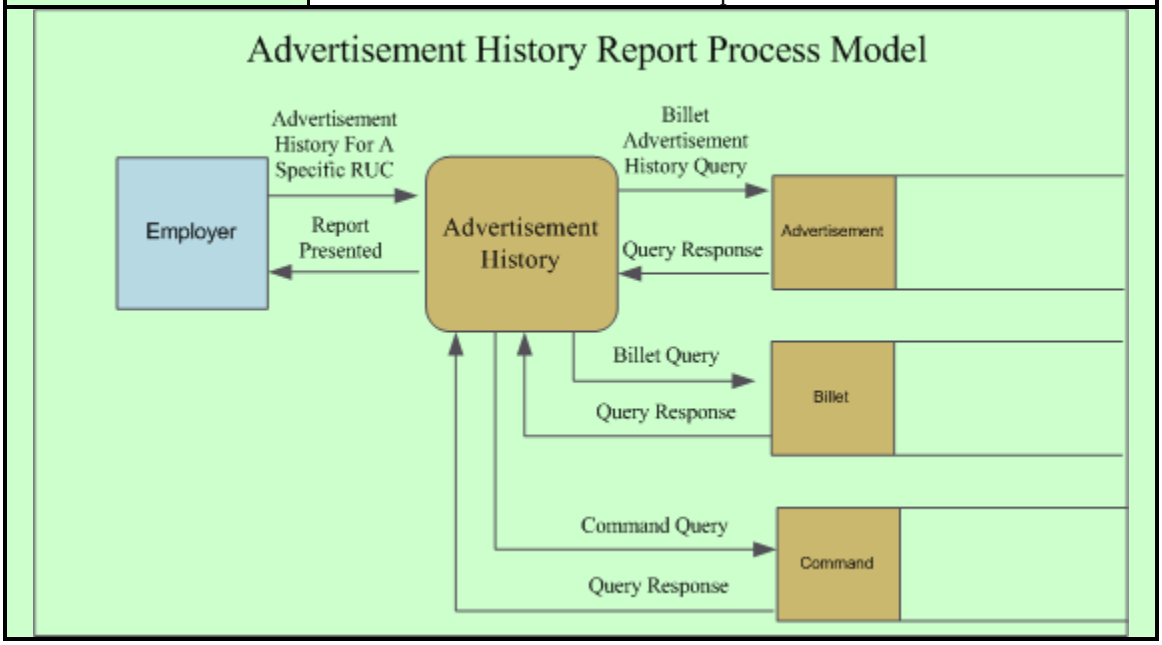
Employer Subsystem

USE CASE NAME:	Generate Ad Hoc Reports	**USE CASE TYPE** System Analysis
PRIORITY	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Employer	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This Use Case describes how an Employer generates and views ad hoc reports.	
PRE-CONDITION:	The employer is registered in the Reserve Billet Advertisement System and has been assigned the appropriate level of access	
TRIGGER:	Employer inputs query data into the report input form and hits submit.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer enters the requested dataset into the form and clicks the "submit" button.	**Step 2**: System verifies completeness of data entered into query.
		Step 3: If all required information is entered, the system performs the query.
		Step 4: System displays results to Employer.
ALTERNATE COURSES:	**SR Step 3**: All the required information not present, error message sent to user.	
	AA Step 4: The employer corrects the error and resubmits.	
	SR Step 5: System verifies completeness of data entered into query.	
	SR Step 6: If all required information is entered, the system performs the query.	
	SR Step 7: System displays results to employer.	
CONCLUSION:	The employer is presented with report requested.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



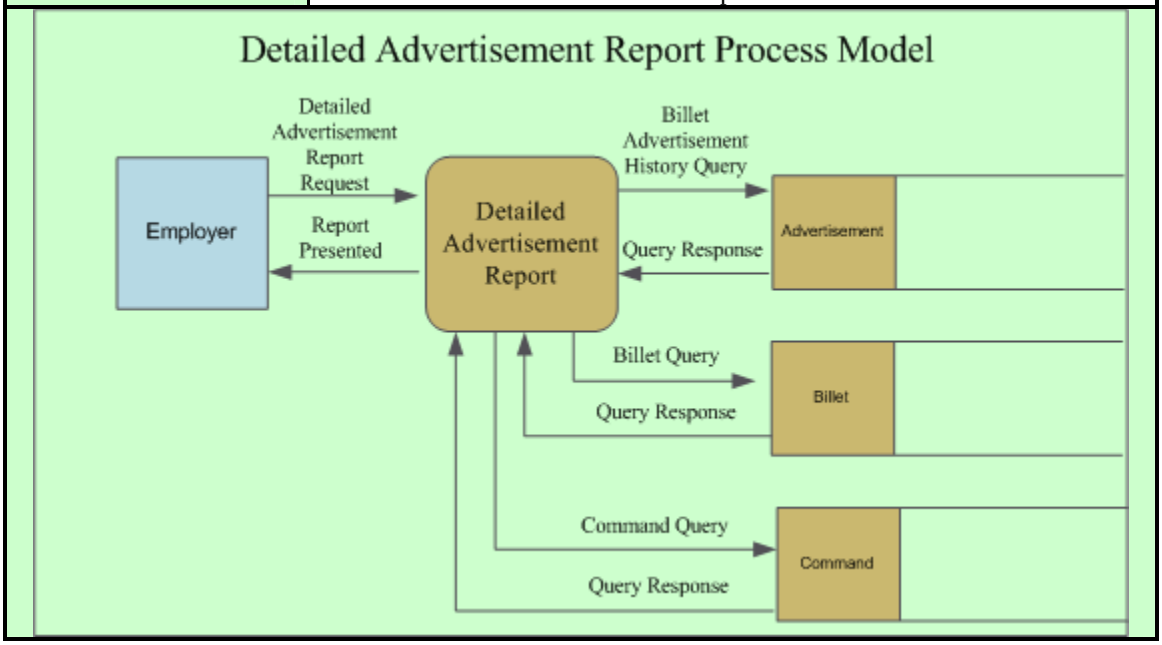
Employer Subsystem

USE CASE NAME:	Generate Advertisement History	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Employer	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how an employer can view a report which displays advertisement history information for all current applications.	
PRE-CONDITION:	The employer is registered Reserve Billet Advertisement System and has been assigned the appropriate level of access	
TRIGGER:	Employer views advertisement history report.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer clicks on advertisement history report.	**Step 2**: System queries information from all advertisements pertaining to that specific employer.
		Step 3: System displays results to Employer.
ALTERNATE COURSES:		
CONCLUSION:	The employer is presented with report requested.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



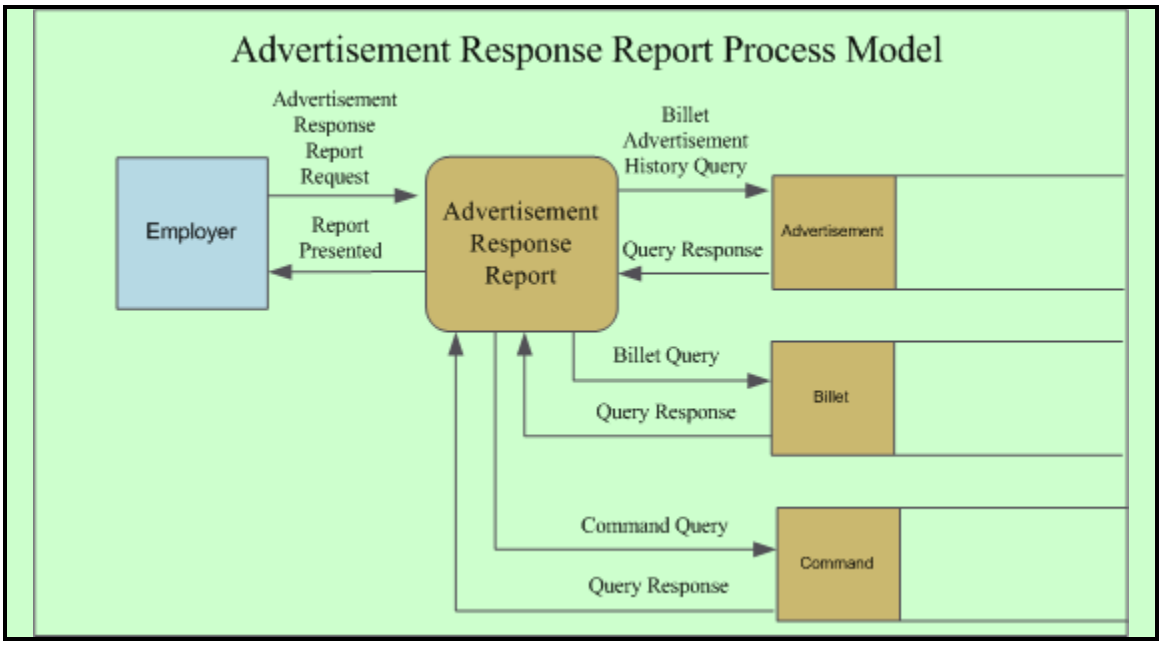
Employer Subsystem

USE CASE NAME:	Generate Detailed Advertisement Report	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Employer	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how an employer can generate a report which lists the details of all current advertisements.	
PRE-CONDITION:	The employer is registered Reserve Billet Advertisement System and has been assigned the appropriate level of access	
TRIGGER:	Employer views detailed advertisement report.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer clicks on detailed advertisement report.	**Step 2**: System queries information from specific advertisement.
		Step 3: System displays all information on specific billet to Employer.
ALTERNATE COURSES:		
CONCLUSION:	The employer is presented with report requested.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



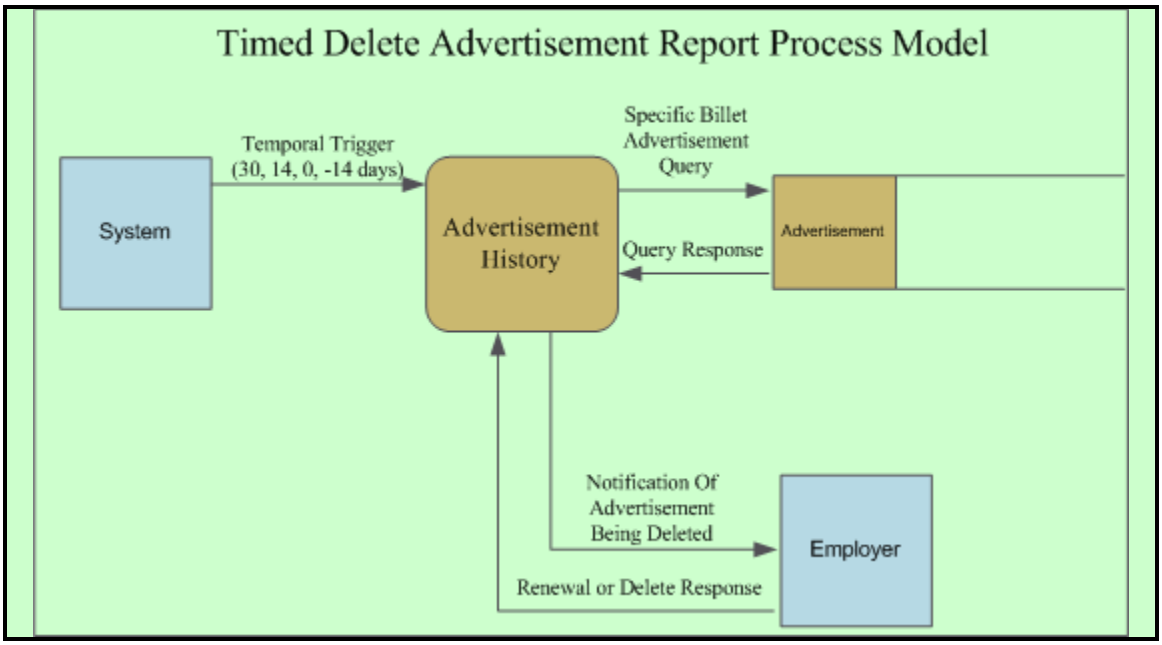
Employer Subsystem

USE CASE NAME:	Generate Advertisement Response Report	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Employer	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:		
DESCRIPTION:	This use case describes how an employer can view a report which displays advertisement response information for all current applications.	
PRE-CONDITION:	The employer is registered Reserve Billet Advertisement System and has been assigned the appropriate level of access	
TRIGGER:	Employer views advertisement history report.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: The employer clicks on advertisement history report.	**Step 2**: System queries information from all advertisements pertaining to that specific employer.
		Step 3: System displays results to Employer.
ALTERNATE COURSES:		
CONCLUSION:	The employer is presented with report requested.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Advertisement Response Report Process Model
Advertisement Response Report Request
Report Presented
Employer
Advertisement Response Report
Billet Advertisement History Query
Query Response
Advertisement
Billet Query
Query Response
Billet
Command Query
Query Response
Command

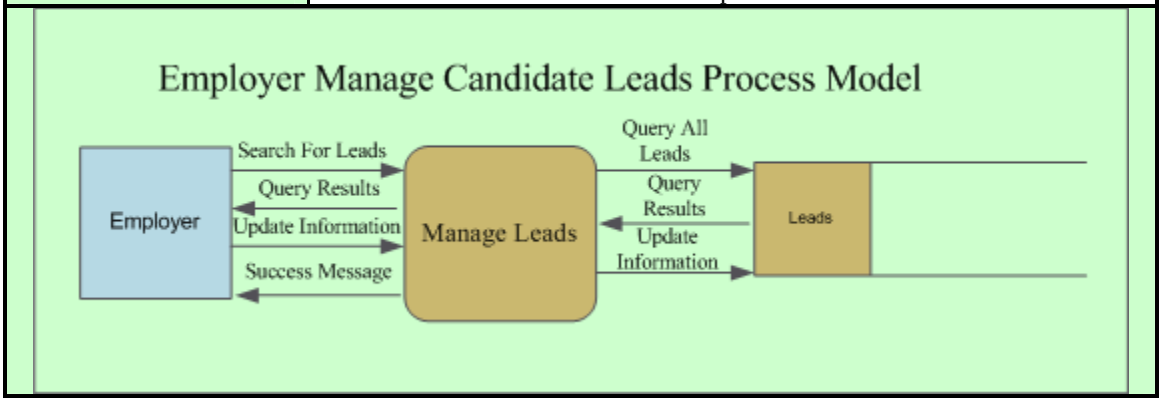
Employer Subsystem

USE CASE NAME:	Generate Timed Report or Email (30-14-0-14)	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR	Employer System	
PRIMARY SYSTEM ACTOR		
OTHER PARTICIPATING ACTORS:	Candidate Employer	
DESCRIPTION:	This use case describes how the system generates a temporal report/email which outlines the billets that will expire soon.	
PRE-CONDITION:	Billets/Advertisements must be resident in the system.	
TRIGGER:	System generates temporal reports.	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: System runs query to determine which billets will expire within the following dates (30, 14, 0, -14).	**Step 2**: System generates email/notification to employers that are responsible for those particular billets.
	Step 3: Notification/Email is received by employer.	**Step 4:** System generates hyperlink to revalidate expiring billets if necessary.
	Step 5: If billets are not re-validated, system deletes billets/advertisements that have been expired for greater than 14 days.	
ALTERNATE COURSES:		
CONCLUSION:	Billets that are within the expiration window will be notified/deleted.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	


Timed Delete Advertisement Report Process Model
System
Temporal Trigger
(30, 14, 0, -14 days)
Advertisement
History
Specific Billet
Advertisement
Query
Query Response
Advertisement
Notification Of
Advertisement
Being Deleted
Renewal or Delete Response
Employer

Employer Subsystem

USE CASE NAME:	Manage candidate leads	**USE CASE TYPE** System Analysis
PRIORITY:	Medium	
SOURCE:	Requirement	
PRIMARY BUSINESS ACTOR:	Employer	
OTHER PARTICIPATING ACTORS:	Candidate	
DESCRIPTION:	This Use Case describes how an Employer can manage all leads that have been generated for advertisements that are included in their purview.	
PRE-CONDITION:	You must have the proper roles to be able to complete this use-case.	
TRIGGER:	This use case is initiated when an Employer with roles clicks “Manage Leads”	
TYPICAL COURSE OF EVENTS:	**Actor Action**	**System Response**
	Step 1: Employer with roles clicks “Manage Leads”	**Step 2**: Screen with listing of all current leads appears for the employer to select which one to manage.
	Step 3: Employer clicks on appropriate lead to obtain all its details.	**Step 4**: System displays all details of specific lead.
	Step 5: Employer is given the option to update/delete the lead or return to the Leads menu.	
ALTERNATE COURSES:		
CONCLUSION:	This use case concludes when the employer is successfully able to manage advertisement leads.	
POST-CONDITION:	User is returned to portal homepage.	
BUSINESS RULES		
IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS		
ASSUMPTIONS:	User must have access to NMCI compliant web browser.	



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[5] Major General Richard Huck (Assistant Deputy Commandant for Plans, Policies, and Operations of the Marine Corps) Statement before the Commission on the National Guard and Reserves, 12 April 2007.

[6] Marine Forces Reserve Guidebook, https://mobcom.mfr.usmc.mil/GuideBook/ accessed on 15 January 2008.

[7] Marine Corps Order 1001.62, Individual Mobilization Augmentee (IMA) Program, 8 March 2006.

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